STATE LIBRARY OF PENNSYLVANIA
3 0144 00132954 9

PY C192.17/4
V.25

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

Digitized by the Internet Archive
in 2016

https://archive.org/details/pennsylvaniagame00unse_20

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

Pennsylvania Game News

JANUARY 1954 10 CENTS



88.34
16



THE STORY BEHIND THE COVER

FROM the heavily forested regions of Canada—the normal summer home of the goshawk—this bold brigand of the airways swoops down upon our poultry yards and game coverts with deadly effect. He is generally hated, and justly so, by the farmer and sportsman, often paying for his sins with the extreme penalty. Yet like so many of his counterparts in other forms of life, there are those who cannot help but admire his beauty and courage, swiftness and strength.

For many years this largest and most handsome of the Accipiters had a price on his head whenever he visited his Pennsylvania hideouts. Today, he is still given no protection but it has been realized that his visits and depredations are too rare and his collective damage to game or domestic birds too slight to warrant a bounty on his head.

Goshawks are colored alike but there is a decided difference in size between males, which are about one third smaller, and females. Otherwise, the adult birds are characterized by blue-gray upperparts, clear gray streaks on the underparts, and three or four blackish bands on the tail. When traveling, goshawks fly high with steady wing strokes and occasional sailings. But when hunting, these striking hawks fly low, dashing swiftly through open field or forest thicket with an awesome boldness. This audacious killer can deliver a death stroke which tears out the whole side of the victim while the hawk's wings are so powerful that it can easily carry away rabbits and chickens.

Of all its famous characteristics, however, the goshawk is particularly noted for its fierce defense of the nest. Enraged females will not tolerate any human activity near the mass of sticks usually found 40 to 60 feet up in a hemlock or beech tree and will dive again and again in a determined effort to drive off anyone venturing too close. More than one overly curious bird student has been badly cut about the face or head from persistent attacks by nesting goshawks.

During January and other winter months, the scene on this month's cover may be duplicated sometimes throughout Pennsylvania's remote mountains. But for most Keystone State residents, the sight of the goshawk is more easily captured in this outstanding cover painting by Dr. Earle Poole, Director of the Reading Museum and an exceptionally skilled artist-naturalist.

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission

Vol. XXV No. 1

Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

CONTENTS

White Rabbit of Pennsylvania Woodlands 4
By Earl L. Hilfiker

The Old Game Protector and The Complaining Violator .. 8

Borderline 'Cats 12
By Wilbert N. Savage

The Story of Penn's Woods ... 17
By Ivan McKeever

Match Wits With Corvus 28
By Thad Bukowski

Sportsman's Map of Wyoming County 31

White Magic 35
By John Day

Hound Music 39
By Horace Lytle

★

Cover Painting
By
Earle Poole

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Editorial . . .

Should Old Acquaintance Be Forgot

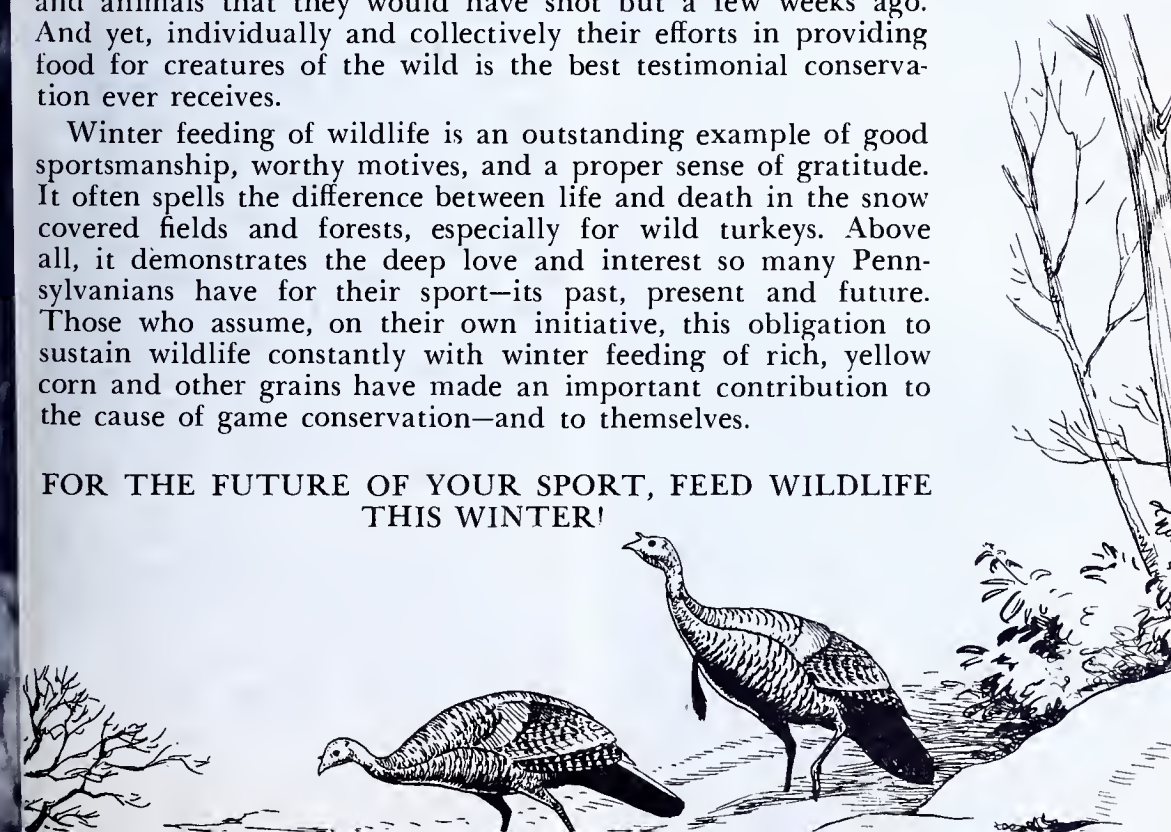
NEW YEAR'S Day is a time for celebration—a holiday for humans filled with memories of old friends and good times, with firm resolve and great hopes. But to creatures of the wild, it's just another day, their only resolution being the desire to see the return of Spring.

From now through March, Nature will be testing and selecting next year's brood stock. The test will be severe. Only the most fit—the strongest and healthiest—will survive. This is the season when a thousand wildlife obituaries may be found clearly imprinted on the white pages of every fresh snowfall. For those who can read the symbols, the future of next fall's hunting seasons will be cast. Deer, wild turkey, grouse, rabbit and ringneck—all leave signs on the snow which indicate both the number and quality of their kind.

In this annual time of crisis, there are many Pennsylvanians who meet Nature's greatest challenge by helping feed our wildlife. Whether they spend a Saturday chopping down browse for deer or strain to carry heavy loads of corn back to some remote turkey feeder, these are truly crusaders for conservation. It is ironical, even unbelievable, to persons who have no firsthand knowledge of sportsmen that these same men now spend their time, effort and money in saving the very same species of birds and animals that they would have shot but a few weeks ago. And yet, individually and collectively their efforts in providing food for creatures of the wild is the best testimonial conservation ever receives.

Winter feeding of wildlife is an outstanding example of good sportsmanship, worthy motives, and a proper sense of gratitude. It often spells the difference between life and death in the snow covered fields and forests, especially for wild turkeys. Above all, it demonstrates the deep love and interest so many Pennsylvanians have for their sport—its past, present and future. Those who assume, on their own initiative, this obligation to sustain wildlife constantly with winter feeding of rich, yellow corn and other grains have made an important contribution to the cause of game conservation—and to themselves.

FOR THE FUTURE OF YOUR SPORT, FEED WILDLIFE THIS WINTER!





White Rabbit of Pennsylvania Woodlands

By Earl L. Hilfiker

TO each and every living creature nature gave some special advantage which fitted it to its peculiar way of life. When she set out to build one who was to live in the deep snows of the densely wooded sections of northern North America, she was in a most generous mood. When she created him, she made something extra special and when she finished, she must have smiled with satisfaction, surveying her handiwork with pride.

Mother Nature has created animals that are larger, some that are more graceful and more imposing, but she never built one better fitted to the surroundings where she intended him to live. He is bigger than the cottontail and has longer legs. He stands taller and his hind feet are enormous. In fact, those great hind feet of his are the most unusual and interesting things about him and it is from these feet that he gets his name—the Snowshoe Rabbit.

His range extends from the extreme east coast of North America, westward to the Pacific and from the wooded mountains of Pennsylvania and West Virginia northward beyond the Arctic Circle. Wherever there are dense stands of timber, there he makes his home. He lives among the pines, in the hemlock thickets or spruce bogs, and down in the cedar swamps.

Nature gives him two coats each year—a summer coat of grayish brown and warm, white overcoat that blends in well with winter's snow. His eyes are sharp and his vision keen. He sees well either by day or at night

and his eyes are placed well out on the sides of his head so that he can detect any movement from above, in front, behind and from the sides.

His keen nose sniffs the air and detects the slightest odors. Each gentle breeze may carry the body scent of an approaching enemy or help him to locate a fresh food supply. That nose serves still another purpose. On the sides are long, stiff whiskers like those on the face of a cat. These whiskers are as wide as his body and at the base of each are sensitive nerves. If the whiskers touch the sides of an opening or passageway, he knows that it is too narrow for his body to go through.

His ears are something special, too, and he can do amazing things with them. When he is at rest and undisturbed, they lie down along the top of his neck but he can lift them up or turn them in any direction, either one at a time or both together. With these ears, he picks up sounds that are far too faint for the human ear. Nature even put sensitive nerves in the bottoms of his feet. These detect the slightest vibration of the earth. If he is asleep, a faint footstep is enough to rouse him to watchful wakefulness.

When the crisp days of autumn come, he begins to change his coat to match the changing seasons. Stiff, white hairs grow out between his toes and on the bottoms of his feet. Then his feet turn white, and next the undersides of his body. The days grow short and nights grow long and cold as winter moves down from the north. Then he is no longer brown but spotted. But soon the change is complete and he has a pure, white coat that matches the color of the winter landscape.

When winter comes, he not only changes his coat and puts on his snowshoes but he also changes many of his habits, especially his manner of feeding. Instead of eating leaves and grasses, he now feeds on ever-



When winter comes, the feet from which this animal gets his name are more important than ever. Here a snowshoe cleans his right "snowshoe."



Above: Early winter snows often catch the snowshoe hare "half undressed." Here he sits with much of the brown, summer fur still showing. Below: An adult hare in summer raises his long ears and sniffs the air, on the alert for an enemy, even a wildlife photographer.





The famous hind feet of the snowshoe hare. Note the stiff, white hairs on the soles and toes which give this animal an unusual ability to race across the snowbanks.

greens, bark and buds. His highly efficient digestive system turns this low grade food into fuel and material for growth and repair of his very active body. He thrives in places where many other things would starve. He even gets along well on a diet of spruce boughs, a food so poor that deer starve when they are forced to eat it.

Winter is a time for which he is superbly fitted. But it is also his time of greatest danger, a time when he is most eagerly hunted by hosts of hungry enemies. The snowshoe rabbit is one of few animals that are active during the winter season and his enemies give him little rest. He is stalked by mink and weasels, pounced on by bobcats, pursued by foxes, swooped down upon by great horned owls. Fleet footed enemies try to overtake him; long winded ones try to run him down. Sly and clever ones stalk him in his lair while others with silent wings attack him from the air. The snowshoe hare gets his education in a harsh school. His enemies are constantly conducting examinations at every hour of the day and night. The dull witted make but one mistake. Those that are slow of foot or have poor endurance are run down and killed. The unwary are quickly picked up by keeneyed and hungry hunters. It is by these harsh methods that Nature maintains a strain of breeding stock that is of high quality.

Those who have hunted him know that the snowshoe hare is a far more clever animal than his little cousin, the cottontail. He is not only larger but he is much wiser, more wary and difficult to outwit. When he is pursued by dogs, he seldom "holes up". Instead he runs in a wide circle and resorts to tricks to lose the dogs. He runs over the roughest country and across the deepest snows, skimming across the top while his heavier bodied enemies sing in and fall behind. He will run through the densest thickets where his enemies cannot follow. He has been known to come to a stop, make a huge jump sideways, land on top of a stump, and sit there while the bewildered dogs try to pick up a trail which suddenly vanished nowhere. In seasons when there is no snow or ice, the snowshoe frequently goes through the swamps and bogs. If hard pressed, he will take to water and swim to some place of safety.

Early spring finds him lean and hungry. This is a time of hunger and scarcity of food. Eagerly he hunts for any food that has been uncovered by the melting snow yet another urge also stirs within him and impells him from the shelter of the hemlock thickets. Early spring is mating time, a time when each snowshoe hare takes an interest in other snowshoe hares. Should he meet a rival male, they wage fierce battles, slashing each other with sharp teeth and kicking and clawing with great hind feet until the rival is either killed or runs away. Towards the female, of course, he is more gentle, even permitting her to share his food.

When the leaves are out and the grass is up, the hare loses that lean and hungry look of early spring. He also loses the last of his ragged white

winter coat. The male leads a rather carefree existence, but for the female, this is a time of great responsibility. Now she has her first litter of young. She hides them back in the seclusion of some thicket and should some enemy come near, she will attack it with a ferocity that you would never suspect of any rabbit. She can bite like a muskrat and kick like a mule; few animals her size dare to stand against her.

The third remarkable thing about this unusual Pennsylvanian is that its young are born fully furred, their eyes are open, and they can run around the day they are born. In this, the snowshoe differs greatly from the cottontail and other rabbits. Not only are baby snowshoes born very well developed but they grow at an astonishing rate. The mother makes no fur-lined nest like other animals and the young lie on a small, cleared off spot of bare earth. Their coloration matches the carpet of dead leaves on the forest floor so perfectly that unless one of the babies moves, it is almost impossible to discover the young at all. The number varies from two to six with four the usual average. For the first three days the young do not leave the nest unless disturbed. On the fifth day they begin to make short excursions to nibble on tender leaves and grasses. Ten days after birth, the baby snowshoe rabbits are nearly half grown and at the end of three weeks, they are nearly full grown.

The mother mates the day the young are born and by the time they are weaned, a second litter is well on the way. There is usually a 35 day development period between the time of mating and the time of birth. The first litter may be born very early in April while the last may be as late as October.

Many places where the snowshoe hare once ranged he can no longer live. He is an animal of the deep forests and the heavy cover. Where man cuts down the forests or turns them into farmland, the snowshoe hare's place is taken by the cottontail. Where deer herds become too large, they browse away the underbrush and soon cause a scarcity of snowshoe hares.

Nature made the snowshoe rabbit for a special purpose; he serves that purpose well. Those who hunt him have found a wary quarry, smart in wilderness wisdom and admirably adapted to his forest home. When winter comes, those who search for the snowshoe hare in Pennsylvania will find an interesting and worthwhile member of Mother Nature's forest family.

. . . *The End*

Young snowshoe rabbits are born fully furred, their eyes are open, and they can run around the day of their arrival. Like most wildlife babies, their protective coloration enables them to blend into their background.



THE OLD GAME PROTECTOR AND



The Complaining Violator

Although written in fictional fashion, this is a TRUE story, based on an actual experience of District Game Protector Claude B. Kelsey, Troutville.

IT had been one of those typical December storms, starting as a cold, raw rain, then turning quickly through sleet and ice into soft, wet snow. The Old Game Protector eased the car cautiously down the hillside road, matching each slight indication of a skid with a skilled twist of the wheel. Sitting quietly at his right, the Deputy gazed intently at the rugged mountains on each side. Suddenly, he turned and pointed a gloved hand in the direction of a deep hollow off the right side of the road.

"Looks like some hunters dragging out a deer up there," he said. "Want to check 'em?"

"You bet," the older man replied. "There's a good parking spot just ahead and we can wait for them there. It will be a few minutes yet before they get down out of that hollow."

Seconds later, the pair had parked their car and were standing at the foot of the mountain hollow where it ended along the road. With his binoculars, the Old Game Protector was watching the descent of the hunting party from the steep hills above them. Dropping the glasses back inside his green wool jacket, he spoke to his working companion.

"Might just as well find a comfortable seat, son. They're still comin' straight for us, but only a snowshoe rabbit could make much time in this snow. Let's brush off that old log over there and take a smoke."

"Hadn't we better climb up to meet 'em?" the Deputy replied.

"Now don't be so dawgone anxious. We'll get plenty of exercise before the day is out and you'll have all the walkin' you want. There's a big gang up there draggin' the deer, taking turns doing it. So we couldn't be needed on that score. As for licenses and roster, I reckon they'll bring them down with them too." With that, the District Game Protector pulled out an old, battered pipe from a hip pocket, began tamping in a load of burley, and settled down on the log.

The two men had been sitting quietly for several minutes, occasionally checking the progress of the hunting party through the glasses, when the Old Game Protector turned to his Deputy, a twinkle appearing in his eyes.

"Y'know, this reminds me of a funny case we turned up a few years

back. Happened right here in this section, too. And it sure turned out to be another example of how tricky human nature can be at times."

"Well, let's hear it," the Deputy quickly responded.

The Old Game Protector puffed deeply on his pipe before continuing. "It was deer season, same as now. But in those days, spike bucks were still illegal. Deputy Stone was working with me then and we had reached the Wittier Trail on our patrol. There was a big group of hunters standing there and as we got out of the car to check their luck and licenses, we could hear considerable loud talk and argument going on."

"Don't tell me they were mixed up in that old key ring controversy," the Deputy interrupted.

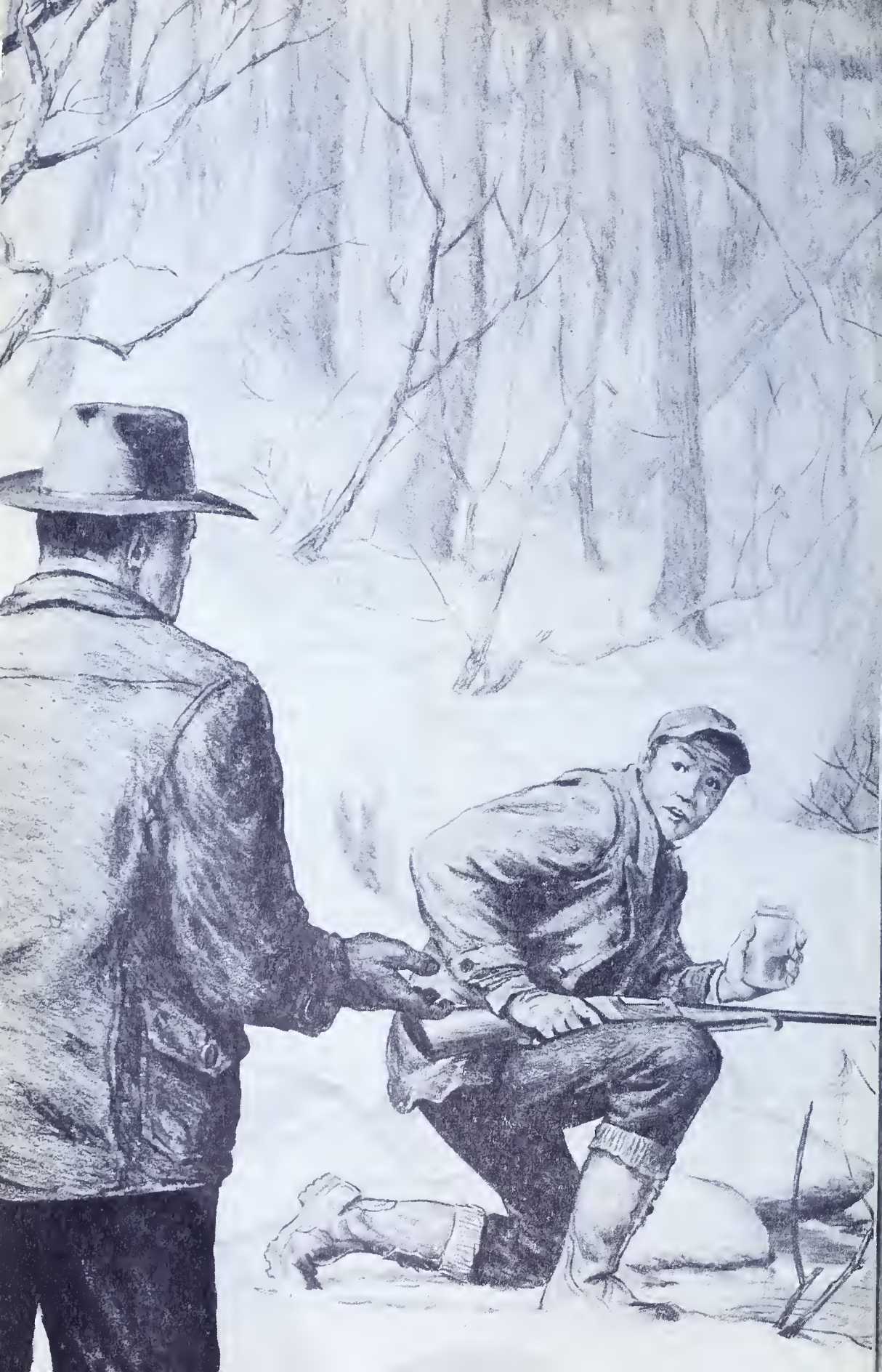
"Well, there was a buck deer at the root of all the trouble," the Old Game Protector chuckled. "But you're getting ahead of the story. Just as the Deputy and I got near the group, an older man and what appeared to he his son turned towards us. And, Man, was that old gentleman ever hot under the collar. Seems he had found a spike buck lying back up on the mountain, shot a short time before we had arrived. He stated he had been hunting in this section for the past twelve years, that each year he either found or heard of spike bucks being killed, and that there never seemed to be anything done about it. Then the younger man got in his two cents worth, denouncing the Game Protectors. They both inferred we all had nothing to do during the hunting seasons but ride around in our cars and pass the time of day with any hunters we found along the road."

"Well, that's sure gratitude," the Deputy exclaimed. "But I guess most folks don't realize that this job lasts just about 24 hours a day, every day from September through December. How many spikes would you estimate you've dragged out of the woods and how many miles of back breaking torture would you say it took to do it?"

"That's kind of beside the point," the Old Game Protector sighed. "Guess I would rather forget that unpleasant past anyway. But to get on with the story, after the complainers had more or less run out of wind, the Deputy and I set out to get the spike. There was a nice tracking snow, just like today, and when we located the deer, we back-tracked on his trail to the exact spot where he had been shot. Then we traced the violator's foot steps back to the exact spot where he had stood when he fired. In a few minutes we even found the shell case, a 300 caliber. Next, I sighted a line from where the hunter had stood to where the deer was hit. I could see a large hemlock stump was in the line of fire and since the bullet had passed clean through the deer, we started searching the stump for the slug. Didn't take long to find it with even some deer hair, blood, and a small particle of flesh imbedded in it. Finally, we obtained markings and a good outline of the violator's boot track. With that, we started out looking for our man.

"Wasn't that like looking for a needle in a haystack?" the Deputy wanted to know.

"No, not exactly," the Old Game Protector replied. "You see, we had a little time advantage. The spike had been killed only a short time before we started our investigation and I figured chances were fairly good that our man was still in the area. So we started down the trail, checking every hunter we saw, trying to find one with a 300 caliber rifle and wearing boots which would match the print we had taken. Well, sir, it wasn't long before we observed a hunter some distance up on the hill. He was getting a drink of water from a spring which I had fixed up the previous summer. When he turned



around, I could see he was the young man who earlier had been giving us such a hard time about being 'lazy' Game Protectors. I asked to see his rifle and after a little argument, he turned it over. Darned if it wasn't a 300 caliber. Next, I made out like I was interested in the fine pair of boots he was wearing. In no time at all, he had raised one foot to give me a better look. The Deputy was just waitin' for that chance, and he checked the foot print in the snow while I was holding the hunter's attention. Soon as I saw Stone nod to me, I turned to this fellow, pointed my finger right at his nose, and said, 'You killed that spike buck!'

"Well, sir," continued the veteran wildlife officer, "you never saw such a change in a man in all your days. Why, his Adam's apple started to jerk up and down, a cold sweat broke out on his face, and his jaw worked for a couple of minutes before he could say anything. Finally, he blurted out that we were right but he begged us with tears in his eyes not to let his old man know about it. And that's the story which just shows that sometimes a man who complains the loudest is as guilty as they come."

The Deputy laughed quietly, then said, "Yup, but I'll bet the $100 fine wasn't much talked about after that. Sure does beat me why some hunters who make a mistake, even if it's an honest one, aren't men enough to admit it, report it, and pay the quarter penalty. Even if they are lucky enough not to be caught—and not many are that lucky—a law violation will haunt them all the rest of their life. But, say, here come our friends."

The two law enforcement officers quickly jumped to their feet as the party of hunters neared the road. Following behind most of the group, were two men dragging a deer. After an exchange of friendly greetings, the Old Game Protector knelt down in the snow to examine the deer.



Claude B. Kelsey
District Game Protector
Troutville, Clearfield County

"Looks like you got an unusually large spike buck here. And I'm mighty glad to say it's a legal deer this year," he said.

"And I'm glad right with you, officer," one of the hunters replied. "I would rather have had a big rack to hang in my den at home, but this spike will taste just as good and it's a darned sight better for the herd to weed out this kind. He must be at least four years old and I'll guess he never had nor never will have a set of trophy antlers. You fellows in the Game Commission sure showed good sense in making spikes legal again."

The Old Game Protector and his assistant merely smiled in agreement. Then, before the tired hunters could recover from their surprise, the two Game Commission officers grabbed the tow-line and started pulling the big spike buck down the trail towards the parked cars.

. . . *The End*



Borderline 'Cats

By Wilbert Nathan Savage

BEYOND the western and curving northwestern banks of the Youghiogheny River, not many miles upstream from Confluence, Pa., there's a region where you can practically turn on your heel and hop from Maryland into West Virginia; and then, facing northeast, take a seven-league stride into the rugged hillsides of Pennsylvania. Of this almost wretched jumble of sharply rising hills, scrub timber, and generous sprinkling of house-size boulders, someone once remarked: "Thousands of acres tailored-to-order as a retreat for varmints—'specially wildcats."

The observer might have added that 'cats once populating this vast area were residents of West Virginia one night, and the next vagabond ramblers in Maryland or Pennsylvania—and they never offered a change-of-address notice!

In the autumn of 1946, after discovering that the 'cats had been specializing in extra-prolific reproduction while local hunters and trappers had been serving on battlefields or in war plants claiming working schedules up to seven days a week, I decided to see what contribution I could arrange toward decimation of the wild felines of rough Yough slopes and thicket-dotted flatlands.

Long before the opening of deer season, I discovered that the area between the headwaters of Salt Block creek and Laurel Run—a territory roughly comprising thirty-five square miles—was a paradise for 'cats. There were plenty of grouse, some rabbits, a random sprinkling of squirrels, and plenty of 'coon, 'possum and other wild creatures which cats rate as tasty potentials. Near the wild plum and grapevine thickets one could almost always locate evidence of

death to grouse by fang and claw. Some foxes were in the area, but 'cats were the dominant hunters of the small furred and feathered folk.

I had heard reports that back-country farmers had lost a number of lambs to marauding 'cats early in the summer; and at least two young fawns were known to have been slaughtered by Br'er Cougar's smaller cousins. With a somewhat motley assortment of traps and friend's 'cat dog of doubtful repute I began to set up a scheme to wreak fatal rebuke on as many of the ruthless killers as I could outsmart.

During an unseasonal cold snap in early November, a surveyor and his helpers reported they had found the carcass of an illegally-killed doe deer while making a survey of disputed lines bounding timberland in the vicinity of Salt Block creek. One of the men said he saw 'cat tracks in abundance around the frozen carcass. There was perhaps less than half an inch of snow—not enough to conceal a heavy trap—but I decided to make some sets and wait for results. I was given the approximate location of the carcass and, knowing the ground like a Grade I Primer, I found it easily and was amazed at the close-spaced network of 'cat tracks around it. As I carefully placed five No. 3's I thought of the fireworks the traps might set off.

Lady Luck must have been against the 'cat tribe, for that night an additional inch of snow came to cover the traps I had placed as strategically as I knew how in somewhat irregular spacings around the unfortunate doe.

Next morning I picked up a friend named Jack Byer and asked him if he wanted to bet against my being able to show him a live wildcat.

"You're too eager," he grinned. "You got one caged up somewhere."

I explained that I didn't have a caged 'cat to my name but a little later I discovered that I sure had a whopper anchored in two of the double-jaw No. 3's—and the disturbance he'd wrought looked like a brush chipper had been at work alongside a mechanized scarifier. He had sprung a third trap and turned another upside-down, and he was in a very challenging mood. Jack got a little too close, underestimating the 'cat's agility despite the hinderance of the traps and light drag clogs, and he got a boot-top raked by the free front paw.

"Jimminy Sizzer!" he yelled. "That is the niftiest left-hook I've ever seen!"

After taking care of the 'cat with a .22 pistol, Jack and I began busying ourselves at the task of restoring to some appearance of normality the peeled-and-plowed surroundings. We couldn't do a very creditable job, so we gave up and placed the traps as best we could, hoping for the disguising influence of another snowfall. But this time luck was *with* the 'cats, for a warm rain lay bare my uncompromising devices of steel. During a four-day period not a trap was sprung.

During the weeks that followed, including January 1947, I learned many things about 'cats. They are rarely as smart as a fox, but the old-timers who have had occasion to use their wisdom in repeated encounters with man's scheming faculties can never be tagged as blundering purveyors of stupidity. Whether they are called upon to pit their cunning against the intrusive presence of traps, snares, or dogs, they can unveil some convincing demonstrations of fancy, feline reasoning.

My first day out with Mike, the dog of unknown performance, netted nothing. I located a few 'cat signs, but apparently they were old. When we passed the deer carcass Mike tried to give rein to his canine interpretation of how a connoisseur of fine venison would perform, and I was



A wildcat will usually tree when chased, rather than hole up. Like most wild animals, Pennsylvania wildcats are wicked antagonists when cornered.

compelled to seize him and attach the leash until we were further along the countryside.

A few days later I caught a small-bodied female 'cat, and in the heavy frost I detected the tracks of a larger cat heading away from the carcass in a northwesterly direction.

In an hour and a half I had enlisted Mike's help and we had cut across below an old sandstone quarry and were able to locate the 'cat's tracks in a hollow where snow lay in a long, peninsula-like arm. Mike struggled admirably in his attempt to straighten out the old 'cat, but it was plain to see that he was having a miserable time in the rough laurel slopes. Finally I cornered Mike and we started picking our way out of a thicket. I was trying to line out the direction of a ridge that crosses the Yough a few miles above Confluence when Mike gave out with a rumbling bawl and started to talk in a tongue that only wild kittys can really understand.

I broke out of the edge of the thicket and climbed to the top of a poplar-fringed ledge of stone. Maybe it would be a good spot; maybe it wouldn't. I could see the glitter of stretches of Laurel Creek on my right, but most of the ground immediately surrounding me was thatched with small vines and briers and scrawny laurel.

Like a miracle coming to pass before my eyes, the 'cat walked into the only open spot in view, leaping hurriedly from stone to stone where evidence of an old creek-bed showed a bald assortment of gray boulders. There wasn't time for deliberate action. But when the .12-gauge roared I knew that at least some of the shot had found their mark.

Mike came charging down from a brier-thatched ridge seconds after I found the big 'cat breathing his last. Mike surprised me by offering sharp evidence that he would welcome an encounter with the 'cat. I edged him back and picked up the lean old tom. His teeth and claws were so badly worn that Mike undoubtedly could have given a good account of himself had the 'cat been only slightly wounded.

My own interest in bringing the cats to last-stand justice soon encouraged other sportsmen to demonstrate favorite methods of using fruitful strategy against the unpopular wild felines.

During February, 1947, both 'cats and foxes in the area were compelled to make use of their highest standards of education. Several fellows with hounds found the sport of the chase tailored well to their outdoor tastes. To make things even more interesting for the wild kittys, J. Frank Browning, an uncle of mine, strung a trapline where dogs rarely ran, or where the traps could be concealed in such a way that Mr. 'Cat would have almost exclusive rights to the honor of springing them. In a few weeks J Frank had fetched three 'cats off the snow-robed hills that frown down on the upper

reaches of the Yough. For variety he added to his pelt collection the skins of several weasels and a mink. The fact that he was 69 never once was an inhibiting factor when the lure of well-populated 'cat country beckoned to the rugged great-grandson of the famous Maryland pioneer.

In March of '47, the 'cats' breeding month, I got two more female 'cats with Mike. Then some unscrupulous punk poisoned him without provocation, and I mourned his loss for I had come to look forward to the thrill and sometimes novel application of his technique in trailing. As if in tribute to Mike's passing, there was a lengthy pause in the pursuit of the wily toms and their mates and kinfolk. Spring and the beginning of summer came, and the citizens of wildcatdom were able to live undisturbed lives—or, I should say *almost* undisturbed.

One late-June day while resting during my quest for gin seng along the Yough hillsides opposite a stone bluff known as the "Flying-Off Rocks," I spied a moving object below and to the left of my location. It was a female wildcat, and, lo and behold! she was moving her young. I figured in soliloquy that this normally would have been a nocturnal task. Indeed, why did it have to occur at all? Perhaps a rattler or a band of polecats had moved into her domain in defiance of her prowess. Or had the old lady turned fickle and decided that she wanted the adventure of setting up housekeeping in other quarters?

At any rate, I started to shadow her. Fortunately for me she had practically reached her destination, for surely I would have lost her in the green of verdant growth that covered the forest floor. Warily, and with visible indication of knowledge of suspicious characters alurking, she entered an opening in a sharply-rising crescent of seam-lined stone and red clay. Thinking she may have another trip to make, I waited for half an hour. When she failed to reappear I made my way to her front door and plugged it thoroughly with wedge-shaped stones. I found the "back door" at a higher level, where dirt lay heavy and deep beside an uprooted hemlock. I plugged this one, too, and then set out toward home.

When autumn came I noticed one

Once hunted for bounty, the colorful bobcat is now usually pursued for sport. Many a fine dog has learned to its sorrow that it can't lick its weight in wildcats.



significant thing: 'cat sign was scarce. Even down the Yough, miles below Confluence, some friends of mine reported that "something has happened to the wildcats around here..."

There is no secret formula or strategy strictly applicable to the taking of 'cats in the sections they inhabit. The main requisition is to go after them determinedly. Adequate resolution can usually stem from study of the havoc wrought by 'cats in the ranks of defenseless and ofttimes scare game. Ground-roosting birds are always easy prey, but 'cats can explore the tree-tops too. They are incessantly on the look-out for places where game creatures are in emergency or normal concealment. Whether they're called *wildcats, bobcats,* or *Lynx,* their makeup and characteristics are essentially the same. A shorter tail or ear tufts indicate only superficial differences—identical killers wearing slightly different masks and other natural attire.

Several pointers should be indelibly noted by those planning to outsmart the untamed felines. Here are some:

1. 'Cats, when pursued, usually will "tree" instead of "hole up." But different sections offer different types of retreat, and on different occasions in different seasons 'cats will be governed by tricky moods. Be ready for anything. When you expect them to "tree" they may seek a subterranean refuge. Never, in any event, encourage your dog to do single-handed battle with a 'cat. He may lose his life or perhaps an eye or both eyes. A 'cat can hold his own against several dogs by lying on his back and waiting for the dogs to come within reach of his cutting and slashing equipment.

2. When trapping or hunting 'cats, don't ever entertain the idea that they have regular crossing places or favorite "thru routes" like the fox. 'Cats travel with promiscuous abandon, so expect them where you find them. If they stick to one route consistently it is virtually always an accident.

3. Scent can effectively be used in trapping 'cats. Fish oil or a blended commercial scent containing fish oil is best. Be sure to place scent so that Mr. 'Cat will have to cross general or specific trap location in order to reach the ultimate point to which his nose is leading him. Excellent covering for traps is fine duck or chicken feathers. But almost anything that will not interfere with the trap's free and clean action can be used. Natural sets are best, but if you find it necessary to build a bait pen, do the job in the fall and allow it to weather a bit and take on a natural appearance. Freshen up your bait often. Almost nothing except 'cats and the canines will eat 'cat flesh so you can help avoid catching other animals by using it for bait.

4. Traps set for 'cats should be clean and free from human odors. For extra-fast action, wax them. Don't go too near sets when inspecting them for catches. Mr. 'Cat has extremely keen eyesight and he may detect some irregularity that normally would escape the notice of the wisest red fox!

5. In studying the behavior and habits of 'cats it is helpful to note that they are virtual wizards in adapting themselves to various climates. In any region, and especially in wet, swampy country, wildcats have no fear of water; in hot desert country they get along fabulously well; and in northern country they challenge the toughest of winters and the lasting impact of grim living conditions. They revel in desolation; they haunt the ruggedest of rugged terrain.

. . . *The End*

The Road to Conservation

THE STORY OF PENN'S WOODS

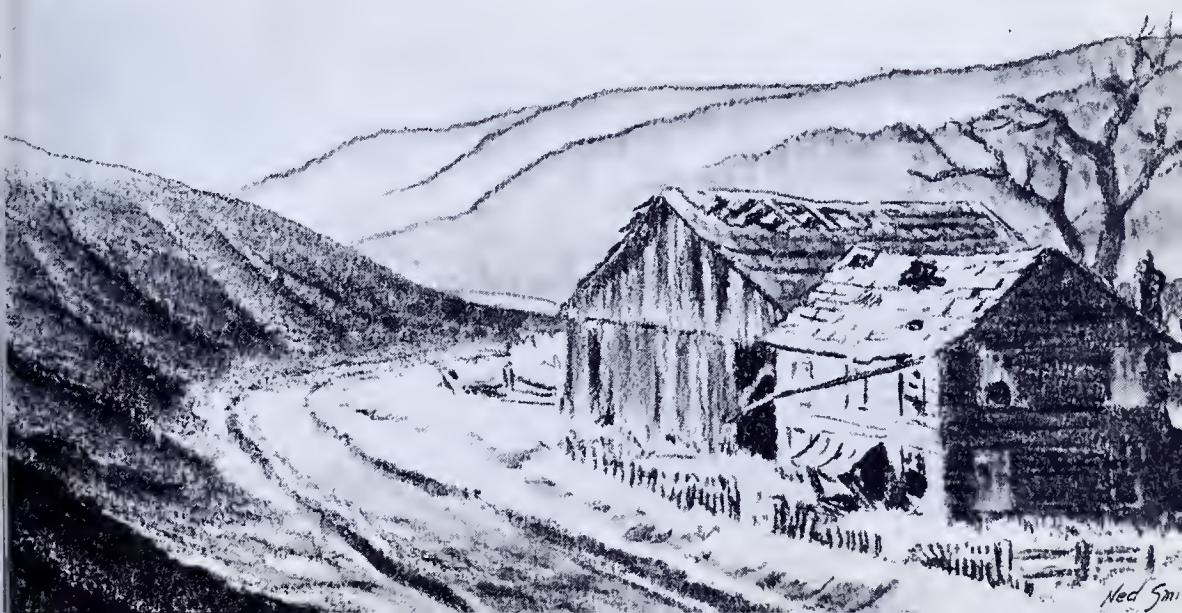
By Ivan McKeever

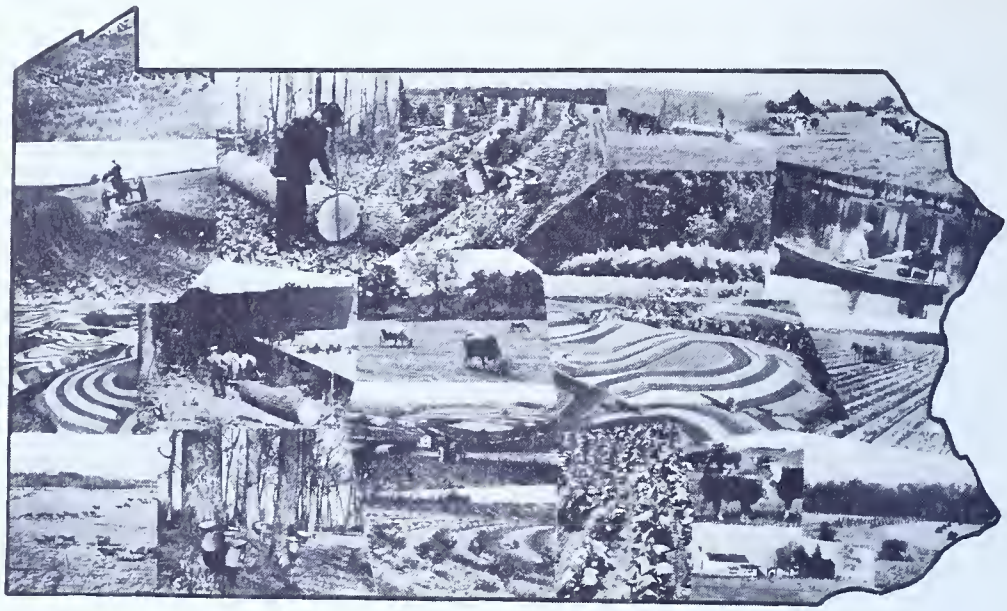
This article is the seventh in a series under the title "The Road to Conservation." In previous articles we have seen how people in ancient times neglected and destroyed their renewable natural resources, especially the soil. The fall of Babylon, the decline of Greece and the destruction of Carthage are only examples of what has happened when people fail to recognize the importance of their soil and other natural resources.

This article comes closer home and deals with our own Pennsylvania. Perhaps we can detect a pattern of land use not too dissimilar to other lands in earlier periods. Future articles will deal with additional examples of land use, some within our own State. Special emphasis however will be given to what is being done in Pennsylvania and will show who is helping with the job of conserving our renewable natural resources, the soil, the water, the forests and the wildlife.

IN 1681, when Charles II, King of England, granted William Penn approximately twenty-nine million acres of land in the New World in payment for debt, little did either realize the vast wealth involved in this transaction. Pennsylvania was then covered with towering forests of white pine, hemlock, hickory, poplar, oak, chestnut, ash, black walnut, and beech. The canopy of forest was so dense in many places that the sunshine never reach the ground. The falling leaves quickly rotted to leaf mold that accumulated from one to three inches deep over the mineral soil. Insects mixed this organic matter with the surface soil.

Under these conditions there developed over the state a mantle of topsoil six to fourteen inches deep. The depth of the soil depended upon the steepness of the slope and the nature of the original rock from





SCS Photo

This is how "Penn's Woods" looks to the traveler today.

which the soil was formed. The canopy of trees and the spongy covering of the forest floor protected the soil against the beating rains. Rapid absorption of the rainfall retarded erosion and reduced floods.

The topsoil was nearly all loam, very loose, and porous. Beneath this loose and porous topsoil, the subsoil was heavier and more compact, with well-defined cracks and fissures between blocks or fragments of earth. Roots of trees and water followed these natural channels. Root growth and the burrowing of insects and worms enlarged the channels. The structure of the topsoil and the subsoil, with its ability to absorb and hold rainfall, made possible a high water table; thus there were many springs of clear, sparkling water.

The pioneers were able to determine the different kinds of soil from the rocks they found present. Some settlers sought limestone land; while others preferred sandstone and shale land, because of similarity to soils in their homelands. Nearness to springs and streams also helped them decide on a site for settlement.

There were great variations in the soils of Pennsylvania. These variations ranged from the deep, well drained fertile soils of the Piedmont, found in the southeastern part of the state, to imperfectly drained soils that are more common in the northern and northwestern parts of the state. The poorly drained soils with their tight subsoils prevented the water from moving freely to the deeper bedrock.

The early settlers learned a great deal about the soil from the kind of trees they found growing on the land. For example, the limestone valleys were covered with excellent stands of fast-growing hardwood that included black walnut, always a true indicator of fertile, well drained soils.

This great forested area was a natural habitat for many species of wild animals. Penn and his companions were astounded at the size of the flocks of wild pigeons. These birds were reported to have made the skies of Pennsylvania purple with their pilgrimage to hatching places in the north each spring. No other American bird has appeared in such

colossal numbers. No other was slaughtered by man in such an inhuman fashion. Despite the slaughter, they were still present in countless millions down to the 1880's. Then they disappeared completely. Today not one remains in all North America.

Penn saw much game in the forest. He reported seeing elk almost as large as a horse. A hundred years later a few of these great animals still roamed the forests of central Pennsylvania. Panthers were rare. They fought a losing battle for survival but were still present a century after Penn had gone. Buffalo were common. Buffalo Run, Buffalo Creek, and Buffalo Valley were so named because herds of bison once roamed over the meadows and along the streams. The many deer in the forest were one of the favorite foods of the Indians and early settlers. Bear were also plentiful.

Under such conditions of forest and soil, the streams ran clear most of the time. The beauty and purity of the rivers were especially noted by the early explorers and settlers. Captain Henry Hudson, in his effort to find a shorter course to the Indies, sailed up the Delaware and is reported to have written in the logbook of the "Half Moon": "Never in all my travels have I seen such sweet-smelling waters."

The rivers teemed with fish, particularly shad. One account states, "They are so plentiful that Captain Smith's overseer drew 600 and odd at one draught, 300. is no wonder 100 is familiar." In addition there were sturgeon, herring, eel, smelt, perch, and trout.

This, then, was the kind of land the early settlers found "Penn's Woods" to be, late in the 17th century, a wealth of soil, water, forests and wildlife unexcelled anywhere in the world.

The white man's misuse of these great resources over the next two centuries is a story of waste and destruction. Much of what had taken Nature so many centuries to build was destroyed in a relatively short period without thought for the future.

What Happened

The first inhabitants of Pennsylvania were Indians. It has been esti-

This is an illustration of what happened when Pocono Creek, Monroe County, went on a rampage. After a heavy rain storm, it cut this new channel through a wheat field.

SCS Photo



mated that the population did not exceed 15,000 Indians when the white settlers arrived. Within a century their number had been reduced to little more than a thousand.

The Indians engaged in simple agriculture, hunting and fishing. They usually settled on fertile land, cleared the trees in a limited area, and grew a number of crops. One of the crops most popularly grown was maize or Indian corn. Tobacco was also grown as were certain peas, beans, and squashes. When the soil wore out or became unproductive, they moved on to a new area and started all over again. They rarely stayed in one place more than 25 years. The first settlers learned much about agriculture from the Indians.

To the pioneers the trees were oftentimes more of a liability than an asset. They needed to clear the land and grow crops. Some of the best forest trees ever produced anywhere were cut down and burned in order to raise cultivated crops. Beautiful black walnut logs were split for fence rails.

The magnificent forest covering almost twenty-nine million acres set the stage for a great lumbering industry. By 1860 Pennsylvania led all other states in lumber production. For several decades it surpassed all other industries in the state, but after 1890 it began to dwindle rapidly. The great timber crop was harvested without thought of proper management. Only the best was taken and usually the young trees too small for harvesting and trees not wanted for market were damaged in the cutting operation. Following 1900 the Commonwealth began importing lumber.

In the wake of this harvesting, fires swept through the cut-over land, destroying the remaining timber and saplings, as well as burning much of the organic matter of the soil. Travelers reported that no matter where you went during the fire season, you could see one or more fires burning over the timberland. Whole valleys and highways were blacked out entirely by the dense smoke. With the forest land denuded by exploitive cutting practices and fires, rains fell on the bare soil and ran quickly into the streams, thus adding to the flood hazard.

During the same period a somewhat similar type of misuse and destruction took place on the lands devoted to agriculture. Land thought to be suitable for farming was cleared, usually with little thought for proper harvesting and use of the forest trees. In some sections new clearing was accomplished by what was known as "log rollings." Neighbors for miles around came to roll the great logs into piles and burn them. The "log rollings" were also a social event. While the men rolled and burned logs, the women prepared food for a great noon-day meal.

At first the soils were fertile and productive. Continuous farming, however, destroyed the organic matter, broke down the structure of the soil, making it more difficult for the rain to be absorbed. Erosion was a natural consequence of such misuse. While many farmers did follow good farming methods of the time, for the most part they did not recognize what was happening to their soils. The common term for non-productive land was "worn-out soil." Farmers overcame the erosion losses of one field by clearing additional "new ground." In time, there was no more suitable land to clear.

Square farming of fields, or farming up and down the slope, was the usual practice. By taking away topsoil with every rain, sheet erosion became the worst enemy. This misuse of agricultural land with its resulting loss of topsoil has continued until the farm lands of the Commonwealth have lost one-fourth to three-fourths of the topsoil. There are many places where all of the topsoil and much of



Photo Courtesy Pa. Dept. Forests & Waters

Penn's Woods, once noted for its pure streams, still has much to be proud of. This mountain stream in Sullivan County is typical of the kind of waterways which make Pennsylvania a scenic wonderland.

the subsoil has been lost. In some areas, especially on river bottom land or on level, or almost level land, much of the topsoil has been retained.

Despite the work that has been done in the last two decades to correct eroded conditions, a great loss of topsoil continues. Approximately two million acres of once productive farmland have been abandoned and are not being used for either farm crops, pasture, or timber.

After heavy rains, one frequently sees serious rillings in the corn fields, smaller or larger gullies in newly seeded fields of grain and alfalfa, topsoil washed onto the highways, and muddy streams. These conditions are common even in the best farming sections of the state. The original beautiful streams with their well defined channels have been changed by repeated floodings and soil erosion. The stream beds have been raised and the channels have become clogged with silt.

Most of the large game animals of

early colonial days disappeared or were greatly reduced in the first hundred years after settlement started. By 1890 the buffalo and the elk had been exterminated. Gray wolves and panthers were seldom encountered. A few white-tailed deer lived in the wilder sections. There were relatively few bear. The ruffed grouse, bobwhite, wild turkey, squirrel, and rabbit remained, but their existence was made difficult due to the destruction of their natural habitat and the increasing number of hunters who showed little interest in preserving the wildlife heritage for those who were yet to come. Much of the destruction of birds and animals was on a commercial basis. Ducks and other wild animals were killed by the thousands and markets were glutted with wild game from the forest. Carcasses sometimes rotted by the carload. Thousands of barrels of wild pigeons were shipped to Philadelphia, Chicago and New York markets.

Toward the end of the 19th century, the depletion of our natural resources—the soil, water, forests, and wildlife—caused many people to become concerned for the future. This concern brought about a trend to correct two centuries of thoughtless exploitation.

Trend Toward Conservation

During the first half of the present century, much has been done to change the trend from misuse to one of conservation and wise use of our natural resources. This period brought improvements in crop rotations and other good farming practices encouraged by the teachings of the Agricultural Extension Service, Vocational Agriculture, and other agencies.

Soon after the turn of the century, Pennsylvania's State Department of Forests and Waters was established. This department has been instrumental in helping to bring about an extended program in forest conservation, both public and private. This department also manages almost two million acres of land.

The turn of the century also brought the beginning of the Pennsylvania Game Commission which has had important influence on laws and policies governing the propagation and management of game. The Commission also manages a million acres of state land. The Pennsylvania Fish Commission, organized before 1900, has done much to improve good fishing through stream management and fish propagation.

The Pennsylvania Game Commission and the Pennsylvania Fish Commission, through their efficient and wise operation and supported by the good council and help of Pennsylvania's sportsmen, have placed Pennsylvania in an enviable position insofar as the sportsman is concerned. The good hunting and fishing in Pennsylvania today is an outgrowth of advanced planning, good work and cooperation by everyone including the farmers.

In 1935 the Soil Conservation Service of the U. S. Department of Agriculture joined in conservation activities in Pennsylvania. The Service began a series of soil conservation demonstrations on relatively small Pennsylvania watersheds. In the demonstration areas complete conservation programs, covering entire farms, were developed with individual farmers who wished to cooperate. Some of the demonstration projects were carried out with the help of CCC camps.

Since 1936, the U. S. Department of Agriculture's Production and Marketing Administration has helped Pennsylvania farmers finance the establishment of soil conservation practices.

All of the separate activities of state, federal and other agencies and individuals did much to focus public attention on the need for conservation of natural resources, but it did

not stop the loss of valuable topsoil which continued to disappear at an accelerated rate. The early watershed demonstration projects developed methods that could be successfully used in controlling soil losses, but it reached only a limited number of farmers. Need for one overall policy became increasingly apparent. With it came the realization that, if the job were to be done adequately and in time, it would have to be based on a unified program developed and managed by local people.

In Pennsylvania, and in other states, this type of thinking set the stage for action, and in 1937 brought the enactment of soil conservation district laws under which the federal government could provide assistance to locally organized soil conservation districts set up under state laws. Within a relatively short time all forty-eight states had passed the necessary legislation and the organization of soil conservation districts was underway.

An Important Agricultural State

Pennsylvania is a leading agricultural state. It has some of the best farmland in the world. For the most part, the soils are productive and respond well to proper treatment but, at the same time, they are erosive in nature.

Climatic and soil conditions are suitable for a general type of farming and for the production of grass and trees. Usually there is sufficient rainfall, although distribution sometimes brings about dry periods. Full damage of droughts is averted by the general type of farming. Many of the summer rains come in hard thunderstorms, which cause severe erosion. To be effective, the planning of the conservation program for any farm or field has to take torrential downpours into consideration.

The loss of soil from Pennsylvania farms could have been more serious had it not been for the interest of the farmers in the land. Thousands of well-kept farms and improved farm buildings speak well for Pennsylvania farmers.

After reviewing the history of Pennsylvania agriculture from the time the Indians carried on their simple farming methods to the up-to-date farming of today, we can only arrive at the conclusion that Pennsylvania soils are indeed worth saving and improving.

. . . *The End*

The activities of soil conservation districts in Pennsylvania were discussed in article number two of this series and appeared in the June 1953 issue of the GAME NEWS. *The next article of this series will be "Over Tioga County's Rolling Hills."*

Excellent Conservation-Education Bibliography Available

"Free and Inexpensive Materials for Conservation Education" is an excellent bibliography of source references and materials available to persons in educational work, the Wildlife Management Institute reports. This 15-page list of supplementary classroom aids, applicable in grades one to twelve, has been compiled from state and federal agencies, universities, business, and industry. Reprints are available from Dr. Richard L. Weaver, P. O. Box 2073, Ann Arbor, Mchigan, at 10 cents each. Orders of 100 or more copies will be discounted at 20 per cent.



Watch Dog

ALLEGHENY COUNTY—There are many odd things that happen while hunting, trapping or running dogs, but this is the most unusual one in my book. In October, Charles Sabo of Pittsburgh was running his beagle "Spottie" on the Mt. Lebanon-Dormont Club grounds. Unknown to him, another fellow was trapping for fox on the archery course. "Spottie" got caught in the trap, and when Charles went to take him out, the dog made a pass at his wrist. Instead of biting Charles, he bit his $60.00 wristwatch. Charles got the dog out of the traps and proceeded to look for his watch which was missing from the band. In the meantime, "Spottie" took chase after a rabbit. Not being able to find his watch, Mr. Sabo took the dog to a local veterinarian for an examination. Sure enough, the watch was in the dog's stomach. The doctor operated on "Spottie" and removed the watch. From last reports "Spottie" is doing fine in the hospital.—District Game Protector F. H. Servey, Jr., Clinton.



Deer Become Drive-In Feature

CLINTON COUNTY—On the night of October 31, a rare treat was enjoyed by upwards of 100 people travelling a dirt road in East Keating Township. On some leased land near the road the food and cover crew has planted four acres of wheat, with probably 30 deer enjoying the green cover every night. This has attracted crowds of sightseers who enjoy watching the deer and their antics. In fact, some nights it looks like a drive-in theatre. On the night mentioned, two huge bucks got into one of their seasonal fights watched by the occupants of about 30 automobiles. In fact, the area was lit up like an arena, with the two fighters in the center of the stage, not minding at all the attention they were attracting. To top it all, everyone of the spectators can tell about it, but no one had a flash camera handy to record the event.—District Game Protector Charles F. Keiper, Renovo.

Wicked Weasel Wanted

SUSQUEHANNA COUNTY—Recently an unusual incident was related to me by Deputy Potts living at Forest Lake. The story goes that a family living near to him, while checking a small baby sleeping in a crib, discovered a weasel running away from the crib. Upon further inspection they found that the animal had bitten the child in the ear. The next night the mother was awakened by the animal which was chewing on her finger. Again the weasel escaped.—District Game Protector James W. Clouser, Montrose.



Stoney Woodchuck Stops One

FAYETTE COUNTY—Mr. Wood, a Farm Game Cooperator on Project No. 146 in Fayette County, noted the following: While mowing alfalfa, he noticed the cutter bar catch on a stone and turn it up on end; apparently making it appear like a chuck sitting up when viewed from the road below. When reaching the other end of the the field, Mr. Wood happened to look back and saw a chuck hunter approaching the stone very cautiously. He maneuvered around for a shot; then aimed very carefully and let one go. The dust flew off the rock, proving his aim was good. He saw his mistake and took off before anyone could question his eyesight.—Food and Cover Corps Foreman, Andrew Ewart.

State Bird Visits State Capitol

DAUPHIN COUNTY—During the month of October the city of Harrisburg was visited by grouse on their "crazy flight." The evening of October 18, I had a call from a housewife in Colonial Park informing me that a hen pheasant had flown through two windows of her home and broken its neck against the wall in the hallway. Upon arriving at the home of the complainant, I was much surprised to find a female Ruffed Grouse rather than a pheasant. It is particularly interesting as the area is so far from any natural grouse habitat.—District Game Protector Paul Glenny, Harrisburg.

Bear Abundance

MONROE COUNTY—The bear population in this county is the largest since I have been stationed here. One large bear killed a 160 pound pig and carried it about 300 yards from the pen which it demolished before killing the pig. Another indication of bear abundance when a lady near Marshalls Creek killed three chickens for Sunday dinner. She placed them on the back step and went in the house to get the hot water to dip the chickens before dressing them. Upon returning to the back step about two minutes later, she was just in time to see a black bear carrying one of the chickens across the lawn. The bear had chicken for dinner on Saturday and the lady's family ate only two chickens for Sunday dinner.—District Game Protector John H. Doebling, East Stroudsburg.





Duck Hunter Sure With Sunset Clock

BERKS COUNTY—On the first day of the duck season we apprehended two young men attempting to kill ducks at a rather late hour. Their excuse was that they had no watch, but it was finally agreed to meet and make settlement of the case the following afternoon. I met the young men the following day and while in my car writing out the acknowledgements I heard a loud ticking of what I hoped was a watch and not a time bomb. I asked which had the fine watch I was hearing, and one reached in the pocket of his hunting coat and brought out a large alarm clock, set to ring at sunset.—District Game Protector Harry H. Rickert, Kutztown.

Thoughtless Archer Hits Wrong Target

MONTGOMERY COUNTY—Every year as the season approaches you can find many different investigations on which a Game Protector is called. This year I was called in on one which was unusual, the investigation revealed the following story: On Sunday, October 4, 1953, Mrs. Hutt, R. D., Perkiomenville, Pa., was letting her cows into the barn from the pasture when she noticed one cow acting very strange. Upon investigation she saw that a stick was imbedded in its side. She called the veterinarian who operated and found a hunting arrow had penetrated the cow's side and went about four inches into the stomach. The shaft of the arrow had been broken off, probably as the cow ran through the woods. After investigating for some time I did learn that some men were seen in the woods in that section, practicing with bow and arrows. The whole story is just another of poor sportsmanship and another reason why one more farm will be added to those posted with "no Hunting" signs.—District Game Protector William E. Shaver, Mainland.

Sullivan Chipmunks Turn Ferocious

SULLIVAN COUNTY—While talking to one of my deputies the other night he told me of a little incident that I thought rather strange for I have never heard of it. He and his wife were coming over the mountain to my home. They saw what appeared to be a chipmunk in trouble but it wasn't the chippy that was in trouble. Upon closer examination they found that the chippy had a rather large field mouse in his mouth and was trying to carry him across the road, which he finally did and went into the weeds along the road. This is the second unusual occurrence that has had to do with the chipmunk here in Sullivan County. I don't know why they are of this type; maybe the mountain air has something to do with it.—District Game Protector Patrick W. Craven, Benton.

Toxic Clay Targets

COLUMBIA COUNTY—Answering a call from a Farm Game Cooperator during October, I was informed of a new kind of damage complaint. It seems that on the previous Sunday a group of shooters herded the farmer's cattle to one side of his pasture field and proceeded to set

up a trap shoot. The result was the serious poisoning of two of his cows which had eaten parts of the broken clay birds. Several recognizable parts of these targets were removed from the cows' stomachs by a veterinarian using a pump. The veterinarian informed the farmer that there were two different ingredients in clay targets which were toxic to cattle and that it was almost impossible to treat for the two poisons at the same time. Perhaps a universal warning to all who shoot the clay birds would be in order.—District Game Protector Mark L. Hagenbuch, Bloomsburg.

Coffee Cottontail

NORTHUMBERLAND COUNTY—A farmer told me of an inquisitive rabbit. It seems the farmer had gone into the summer kitchen to put on a pot of coffee and then returned to the house. When he started back to the summer kitchen he saw a rabbit standing on its hind legs looking in the door window of the summer kitchen. The farmer figures the rabbit needed a morning cup of coffee.—District Game Protector Clyde E. Laubach, Elysburg.

Night Fishing Nets Surprise

INDIANA COUNTY—The following incident was released to me by Dick Simpson of R. D. No. 1, Smicksburg, Pa., who was fishing one night last fall on Little Mahoning Creek. Mr. Simpson had had a cast with a plug, when a great-horned owl cwooped down and picked up the plug and started off with it. The owl swooped down and picked up line could not be released fast enough, the line was broken. About 25 feet from the fisherman the owl was heard to drop the plug into the water. After an extensive search the plug was found and retrieved.—District Game Protector A. J. Zaycosky, Indiana.

Quicksand Hunting Hazard

WESTMORELAND COUNTY—On October 24th, a duck hunter pulled another hunter out of the quicksand on the Loyalhanna Flood Control Area. The hunter was already up to his chest and would not have lasted much longer. I have warned several hunters to be careful where they step while hunting on this area. While providing an excellent hunting ground, this flood control land can be very dangerous.—District Game Protector D. W. Heacox, Irwin.

Silent Squirrel Hunting

GREENE COUNTY — Squirrel hunters in this area really take things seriously. Deputy William Coneyveer checked a hunter who was tip-toeing through the woods in his stocking feet. He had his shoes tied onto his belt. He said if you expect to get squirrels you just have to be quiet.—District Game Protector William E. Cowden, Waynesburg.



Match Wits With Corvus

By Thad A. Bukowski.



THE small game season may last only a month or so of the hunting year but pleasant shotgunning that takes even more skill can be had by anyone who goes in for crow hunting. Certainly there isn't another bird his size around that is as sagacious. I've been fooled by him many a time.

I had broken into a semi-clearing in the woods back of my place after fruitlessly endeavoring to call some crows in over a thicket. Finding myself about fifty yards from the trees and close to a lonely one in the open field, I spied about six crows winging it on the eastern horizon. Hastily, I raced behind the one large tree in the field. I put my call to work and raucously they answered, peeling off in my direction. Somehow they hadn't noticed me. Without moving, and with my gun pressed against the trunk of the tree, I watched their approach until they were almost within range. Just at the right moment, however, they peeled off again, now into single file flight. Circling the tree just beyond gun range, they obviously laughed at my hulking posterior in its exposed position. I, however, continued to play the ignoramus. As they settled themselves around me one on each corner of the compass in the nearest available arboreal vegetation. I, too, remained where I was posted. I called. They answered. I called again. Again their calls came in, alternately. First from the south, then west, north, and east. They were taking turns giving me the Bronx cheer, and I was fool enough to stand there, thinking I could bring them in. After about three rounds of my pleading call and their jesting, jeering answers, I sheepishly got out from behind the tree and walked away.

Many people believe that crow shooting is unnecessary killing. Biologists even dispute with each other as to whether the crow is a bird who's damaging activities outweigh the good that it does. And though it eats upwards of nineteen bushels of grubs, insects, and other

arthropods per crow per year, even the U. S. Fish and Wildlife Commission believes that the bird should be controlled. It all depends on how many there are in a region and what good can be attributed to them in a particular area. Since this is quite difficult to ascertain at a particular place during a particular time, the conclusive answer on their predation may be difficult to establish. The farmer definitely objects to them for the corn damage they do in the springtime. Additionally, they are great robbers of smaller songbirds' nests, wreaking havoc with eggs and even young nestlings. Having worked on a golf course one summer where crows were particularly plentiful, I often noticed them in the early mornings, individual robbers being brazenly chased by small songbirds after they had had their fill of eggs. Then too, crows are known to be occasional predators to young quail and quails' nests and young cottontails. For these combined reasons there is no question that they should be controlled.

Actually, more crows probably die of old age than for any other reason. Most of them are too wise to end their existence at the business end of some chilled shot delivered by a shotgunner, so matching wits with corvus is something of an accomplishment.

Shotgunning for crows is one of the most interesting of off season hunting activities. The hunting can be done in a number of ways. A crow call is a necessity, as it is the best means of originally attracting their attention. A great horned owl is secondly important, for the two are bitter enemies and will battle on any provocation. Many believe that the crow answers the call to aid a distressed relative, but we might suspect, too, that they just as often would like to find a special feast from the origin of the noise.

If you are fortunate enough to locate a rookery, the best crow hunting comes after the close of the small game season during late winter and early spring. At this time of the year crows congregate for the evening in large quarries, valleys or forest slopes. About 4:30 every afternoon they wing their way towards the communal roost. The direction they travel in the late afternoon during winter can give you an idea as to where their rookery may be located. If you follow them by car for a number of days you may locate it. By prearranged signal of some sort all crows head for a particular spot in the rookery, too. The rookery we hunt is a valley five miles long bordered by wooded hills. The crows roost in the trees for the night only, winging away again in the early morning, breaking into small groups of a half a dozen or so, each small group marauding its designated area of countryside.

One of the better ways to hunt a rookery is to stop your car approximately in the middle of the area, somewhere between four and five o'clock in the afternoon, get out of the car, and watch the sky for corvus. The crows come in from all points of the compass from many miles around and congregate by the thousands for their night's rest. Often they come in at a great height and it may be difficult to locate exactly where they'll stay. Sometimes they plummet to earth in a straight dive when directly over their chosen position. This apparently is a self preservation measure that the crows have learned from being repeatedly hunted, to throw off their enemy, hunting man.

Once establishing the position in the rookery that the crows will take for the night, a place of interception can be chosen by speeding to it by car. By getting between the crows still winging in and the exact spot where they must land, often some wonderful pass shooting can be had. Crows like to circle a valley, joining flights before they land. Actually,



Partial cover will only evoke a raucous laugh from crows. You've got to make like you absolutely aren't there.

with the many thousands that come in, it would be rather awkward if they came down from all directions, so their procedure is similar to the orderly flights of scheduled planes coming into an airport.

After a certain amount of shooting, the crows get wise and hike out of their originally decided roost, and head for another part of the rookery. It is at this time that a crow call becomes even handier for the crows will mill around circling a valley in separate groups until one group makes a decision to come down. If again you choose another intercepting point, you may more readily call them close enough to the ground for some fast shooting, as they travel towards their newly appointed spot.

When spring rolls around, crows no longer congregate in a rookery, but rather take over oak groves in small groups for mating. Here they build rough nests of twigs and these are often mistaken for squirrel nests atop the oaks. Spring and summer crow hunting then can become a sort of hopping around oak grove hunting. By car, likely looking groves can be found, and while hidden well in these, you can call crows in, using your owl again. Since the crows are quite wary, however, the hunter's approach will often be noticed by scouts which hang out in the topmost tree in the grove. Usually, one crow sits perched high in the treetop and one lower down, and apparently approach from any direction is detected. If you don't have a gun in your hand little happens, but if you do, you're in for a raucous "chewing" as the crows band into small groups just out of sight or gun range and announce your arrival in no uncertain terms. Occasionally, even then, after about a fifteen minute wait, a call might bring them in. Two calls used by two hunters are much better than one, for when blown together sounds are muted and fakes don't seem as distinguishable to the crows. Since they're particularly curious, they'll often float a scout over your position, and even a group might come in. This is especially true if you have a balsa wood owl perched atop a nearby bough of a sapling about ten feet high and shake it back and forth with an extended chunk of string from a hidden vantage point behind a larger tree or in a blind. Complete concealment is almost a necessity in hunting the crow. When the crows come over a few fast shots can be had, but when the crows disappear after these shots, the best thing to do is to take off again for another grove a mile or two away and start all over again. Your chances of getting the crows back more than once in a grove are pretty slim.

There's really nothing better for keeping the feel of your shotgun and keeping your eye sharp than a good crow hunt.

. . . *The End*

Wyoming County

Forty-first In A Series

Note: This center sheet can be removed, if desired, without damaging the magazine by loosening the two center staples.

Land Area

Wyoming County contains 258,496 acres of which 160,196 acres are forested. Publicly owned land totals 29,357 acres, including 28,064 acres of State Game Lands.

Transportation

Railroad transportation is furnished by the Lehigh Valley and the Delaware, Lackawanna & Western lines. The Roosevelt Highway (U.S. 6), the Lackawanna Trail (U. S. 11) and other important highways traverse the county, which has 270 miles of improved State highways.

District Game Protectors

District Game Protector Thomas W. Meehan, R. D. 2, Mehoopany, has jurisdiction over the following townships: Meshoppen, Windham, Mehoopany, Eaton, North Moreland, Falls, Exeter, Overfield, Tunkhannock, Lemon, Washington, Nicholson, Clinton.

District Game Protector Richard R. Roth, 48 Slocum Avenue, Tunkhannock, has jurisdiction over the following townships: North Branch, Forkston, Noxen, and Monroe.

Fish Warden

Fish Warden Harland Reynolds, 4 Spruce Street, Tunkhannock, represents the Pennsylvania Fish Commission in this county.

Agriculture

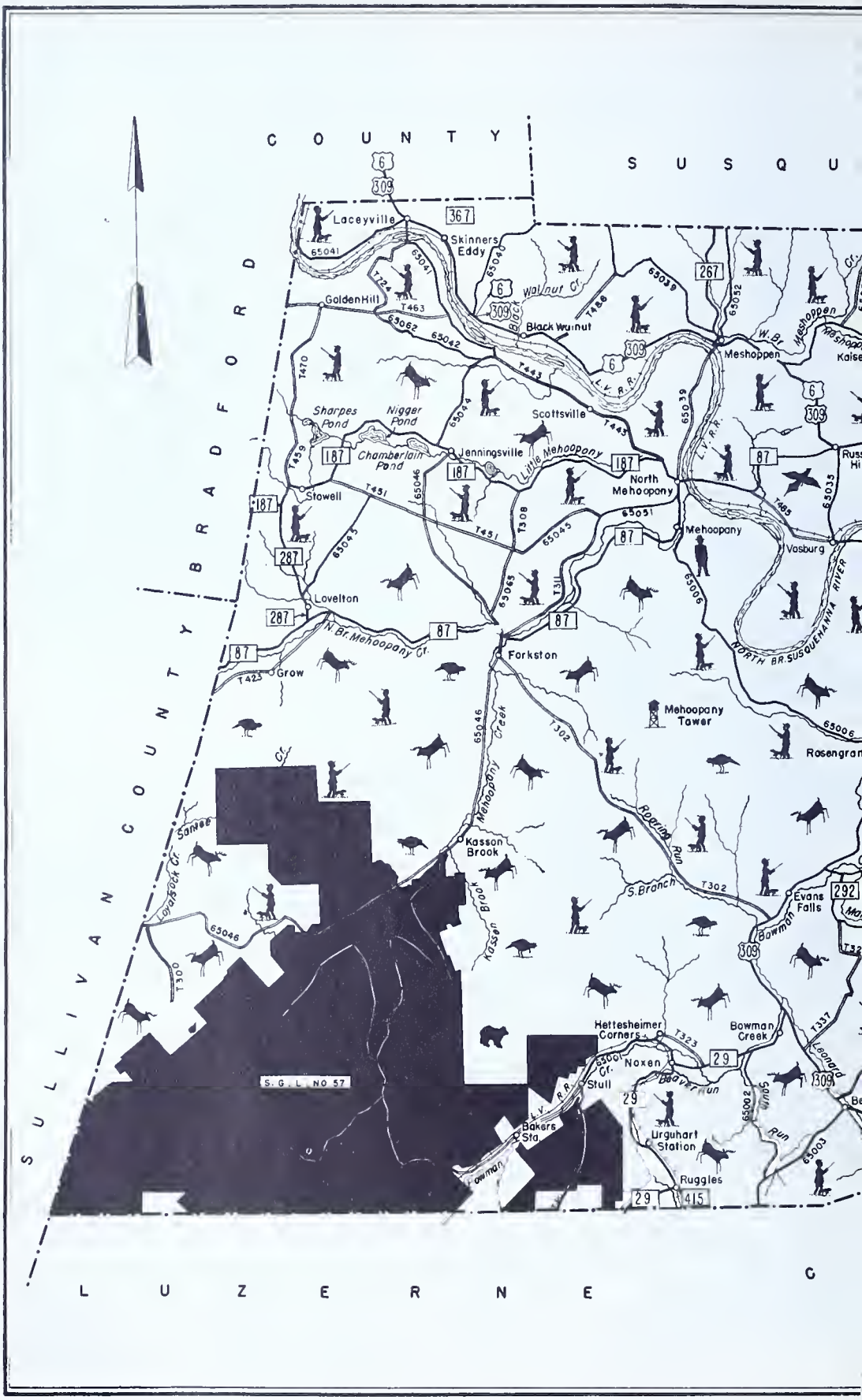
Since Wyoming County lies mainly in an area of high plateaus and is deeply dissected, the country presents a broken aspect. The soil is fairly fertile and in the alluvial flats near the streams it is remarkably rich. The county's leading occupations are dairying and agriculture with 57,125 acres under cultivation.

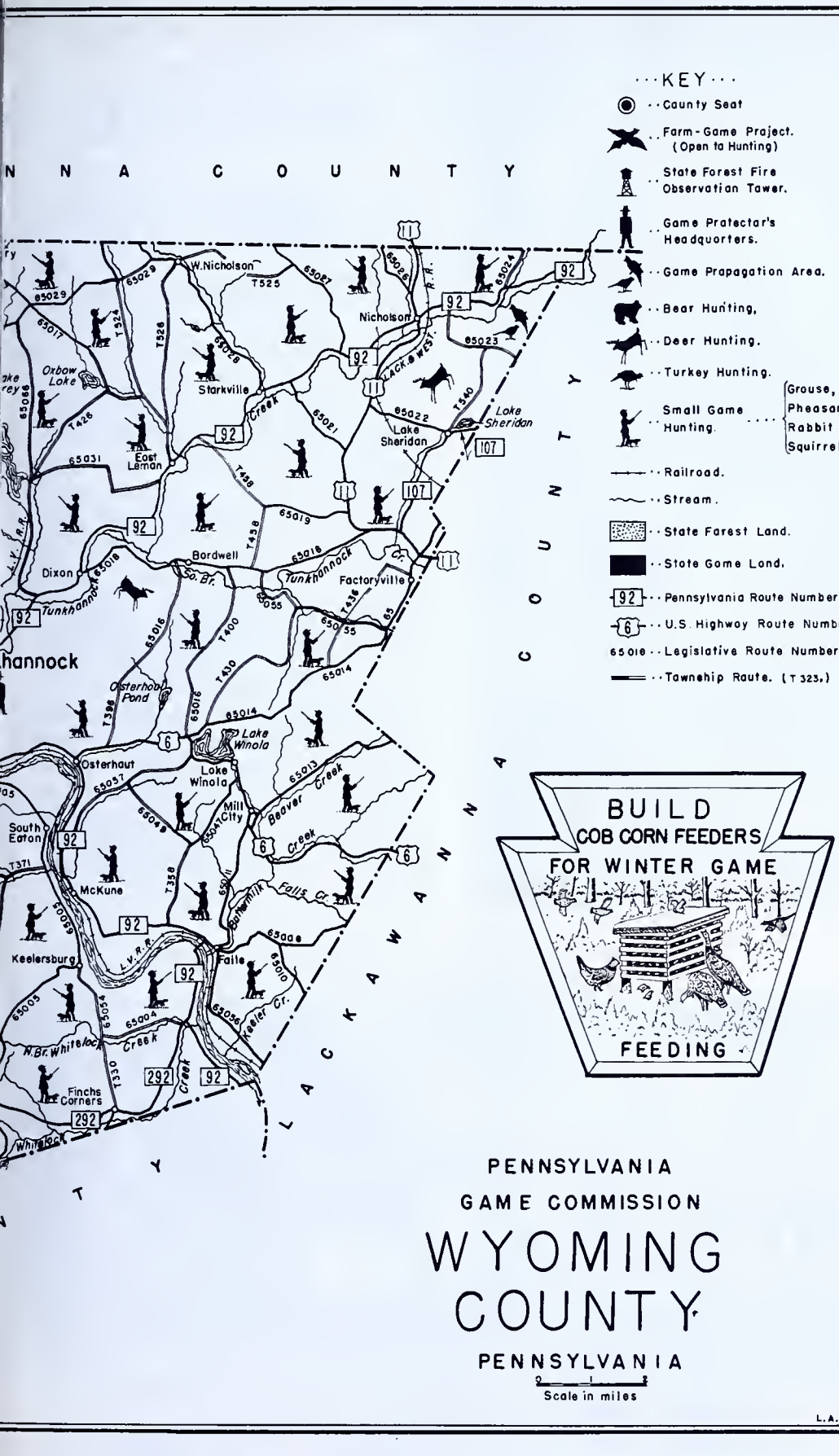
Industry

Lumber and its remanufacture and the production of leather and rubber goods are the leading industries. Flagstone is shipped throughout the United States. The floor of the chapel at Duke University is Wyoming county flagstone, while considerable quantities of this flagstone were used in the Nebraska State Capitol.

History

Wyoming county was separated from Luzerne county in 1842 and given the name associated in Pennsylvania history with a lower section of the Susquehanna, the Pittston, Forty Fort region, where in the summer of 1778 the Wyoming Valley Massacre occurred. Between 1769 and 1787 spasmodic war was waged for control of the Wyoming Valley territory by settlers from Connecticut, known as the Yankees, and settlers from Pennsylvania, known as the Pennamites. During the Revolution they joined arms against the Tories and the Indians. The Pennsylvania legislature in 1787 established the claims of the Connecticut settlers and paid the Pennamites for their claims. The result of the struggle was the establishment of many New England families between Wilkes-Barre and the New York line. The county still shows many signs of the strong New England influence which was behind its early development.


C O U N T Y
S U S Q U
B R A D F O R D
S U L L I V A N C O U N T Y
L U Z E R N E
Laceyville
Skinners Eddy
Golden Hill
Black Walnut
Meshoppen
Sharpes Pond
Nigger Pond
Chamberlain Pond
Jenningsville
Scottsville
Little Mehoopony
North Mehoopany
Stowell
Lovelton
Forkston
Grow
Mehoopany
Mehoopany Tower
Vosburg
Rosengran
Kasson Brook
Evans Falls
Bowman Creek
Hettesheimer Corners
Noxen
Stull
Bakers Sta.
Urquhart Station
Ruggles
S. G. L. NO 57
N. Br. Mehoopany Cr.
Mehoopany Creek
Roaring Run
S. Branch
Beaver Run
Leonard
Walnut Cr.
W. Br. Meshoppen
NORTH BR. SUSQUEHANNA RIVER
L. V. R. R.
Lovelock Cr.
Santee
Bowman
Run
6
309
367
267
187
87
287
292
29
415
T724
T463
T486
T443
T470
T459
T451
T308
T311
T302
T423
T323
T337
T309
65041
65040
65039
65052
65042
65062
65044
65046
65043
65051
65035
65006
65002
65003


N N A C O U N T Y
KEY
County Seat
Farm-Game Project. (Open to Hunting)
State Forest Fire Observation Tower.
Game Protector's Headquarters.
Game Propagation Area.
Bear Hunting.
Deer Hunting.
Turkey Hunting.
Small Game Hunting.
Grouse, Pheasant, Rabbit & Squirrel.
Railroad.
Stream.
State Forest Land.
State Game Land.
92 Pennsylvania Route Number.
6 U.S. Highway Route Number.
65018 Legislative Route Number.
Township Route. (T 325.)
W. Nicholson
Nicholson
Starkville
Lake Sheridan
East Lemon
Dixon
Bordwell
Factoryville
Tunkhannock
Osterhout
Lake Winola
Mill City
South Eaton
McKune
Keelersburg
Falls
Finchs Corners
Whitelock
Beaver Creek
Keller Cr.
N. Br. Whitelock Creek
Oxbow Lake
Lake Sheridan
BUILD
COB CORN FEEDERS
FOR WINTER GAME
FEEDING
PENNSYLVANIA
GAME COMMISSION
WYOMING
COUNTY
PENNSYLVANIA
Scale in miles
L.A.M. '53

Wyoming county has many interesting communities and points of interest. Meshoppen was an Indian settlement and the name is freely translated as meaning "place of beads." It was settled about 1742 and until the coming of the railroads was an important stagecoach town. Skinner's Eddy was named for Ebenezer Skinner and an eddy in the Susquehanna River at this point. Skinner built a tavern there about 1792. Christy Mathewson, famous big league baseball pitcher, was born at Factoryville. Wyoming is one of 17 counties in the State bearing Indian names. A two-track concrete viaduct of the D. L. & W. Railroad, 240 feet high and 2,375 feet long, crosses Tunkhannock Creek at Nicholson. When it was built in 1915, it was the highest concrete railroad bridge in the world.

Recreation—Fishing

Small lakes scattered over the county's high plateau land have made the county a popular region for summer homes and vacationists. Lake Carey and Lake Winola are two of the largest lakes.

Fishing waters (name of stream or lake, fish stocked, location and length or area of stocked waters) include: Beaver Run—brook trout—Noxen, Rt. 29—3 miles; Bowmans Creek—brown and rainbow trout—Noxen, Rt. 29—8 miles; Mehoopany Creek—brown and rainbow trout—Forkston, Rt. 87—15 miles; Mehoopany Creek, N. Br.—brook and rainbow trout—Forkston—7 miles; Meshoppen Creek, W. Br.—brook trout—Meshoppen, Rt. 6—3 miles; Carey Lake—black bass—Tunkhannock, Rt. 28—200 Acres; Chamberlin Pond—black bass—Jenningsville, Rt. 187—47 Acres; Mud Pond—black bass—Lake Carey, Rt. 29—75 Acres; Oxbow Lake—black bass—Tunkhannock—60 Acres; Susquehanna River, N. Br.—black bass—Falls, Rt. 309—46 miles; Tunkhannock Creek—black bass—Tunkhannock—13 miles; Winola Lake—black bass—Lake Winola, Rt. 6—198 acres.

Recreation—Hunting

Wyoming County offers good hunting for forest game species, including bear, deer, wild turkey, squirrels, grouse, and rabbits. One large tract of State Game Lands, Number 57, is located in the southwestern region of the county near Noxen. It contains 28,064 acres.

The railroad viaduct crossing Tunkhannock Creek at Nicholson.

Photo Courtesy Pa. Highway Dept.



Outdoor Reveries



White Magic

By John Day

IN ALL the stirring year-round saga of outdoors unlimited, there is no magic that can equal the sudden, silent quick-change artistry of the snows of winter. The frozen hills lie waiting, bound and numb, clamped in the icy bite of the steel jaws of Boreas. The threat of blizzard hovers like an angry, upraised fist about to strike. The countryman stands in his doorway and hears a fox's shivering bark stab across the wind-blown hills.

Then mystic midnight halts the braggart wind and quietly falls the snow upon the land. "He giveth snow like wool," sings the Psalmist. "He scattereth the hoarfrost like ashes." And when morning dawns the white magic has breathed frost webs on window panes, transformed pump and gate and rock pile into strange and wondrously beautiful phantoms, and clothed the bare brown hills in soft warm robes of purest white.

The outdoorsman seeks open country when a driving storm smokes through the woodlands. Trudging eagerly into the wind, his face upturned to feel the gentle sting of the flakes on cheek and lip, he finds that the familiar landscape is suddenly strange and unreal. The row of maples close by the roadway stands dark and solid against the drift of the storm. Beyond the maples a few corn shocks are barely visible in the opaque melee. Beyond that there is nothing but the white mystery.

Snowflakes have very different characteristics, depending upon the quadrant of the storm. The cyclonic nature of winter's storms signifies a constant whirl about the advancing storm center. This whirl moves as do the hands of a clock, so that an approaching storm usually shows up first as an east wind. When the storm center passes over the east wind dies down for a more or less quiet period and then the wind shifts and gradually veers to the west and north, bringing clearing, cold weather.

Take your watch dial for a map, the north at twelve o'clock, and watch how the snow flakes change as the next storm swirls over. When the wind blows from between twelve and three the flakes are big, wooly, wet tufts of soft snow. As the wind shifts past three and before it reaches six, the flakes grow lighter and often threaten to turn into rain. Sometimes for a brief spell they come down in little hard pellets.

Then as the wind passes six and heads around toward nine, the flakes become still smaller, lighter and more perfect in design. It is when the storm is in this quadrant that the fancy flakes the photographers love put in their appearance. Finally as the wind shifts to the fourth quadrant there is little or no snow, the skies begin to clear, and the storm is on its way elsewhere.

The January wind has been putting in long hours of overtime among the tall trees on the ridge behind the house. No forty-hour week for this roistering fellow. I hear him practicing at his drums out there in the bedtime darkness and on more than one midnight occasion recently his wild music has brought me full awake to revel in the crashing rhythm of his swaggering passage along the tree top highways. He's got a serious job to do up there on the ridge. His task is to prune out all dead wood and weak-rooted saplings. But he believes in singing while he works, much to the delight of countrymen everywhere.

There are other months with more windy reputations than January, but the countryman is more conscious of the big talk in the tree tops as the new year gets under way. When it gets lonesome up there on the ridge the wind sometimes comes knocking at the door. The countryman hears him muttering down the road, trying the gate on its complaining hinges and shuffling among the sodden, heaped-up leaves by the garden.



January's wind is a creature of many moods. When he comes out of the west he's a storming bully, banging shutters and blowing shingles right off the roof. But when he comes gray and cold out of the east he's down on his luck and wails as sadly as a professional mourner. The countryman hears the east wind keening along the dripping eaves and burrows deeper under the blankets.

And then one fine day the January wind. Perhaps a few of them do even on its balmy breath those enticing odors of the tropics that come to our frozen land only when spring is stirring far to the southward. One sniff of this intoxicating air sets the great horned owl to house hunting in the timberlands.

Before movies and television intervened, small boys knew all about wind. Perhaps a few of them do even yet. Particularly those March and April winds which show little mercy to kite strings, and the after school breezes which spin whittled pinwheels so satisfactorily.

Varied treasures hitch rides on the January wind. When in the right quarter he brings the eerie midnight whistle of a distant train—a lonely,

distance-thinned sound. On nights of fog he freights the tangy odor of the neighboring barns. And always in his nightly rounds he echoes the talk of trees which contemplate weather changes long overdue.

Once in a while in summer you can see the wind, watch it ripple recklessly across a meadow and slip under the fence. But the January wind don't believe in showing himself. He believes in blowing where he "listeth" and will pounce suddenly to send a clump of leaves scurrying, then just as suddenly double in his tracks and whirl the dervish leaves back into a neat pile.

The countryman walks out in the mid-winter evening when the snow has laid its mantle on the hills and built cornices along the brooks. Orion greets him from the old familiar corner of the sky, and the Dog Star hangs like a lamp amid the bare branches of the oaks on the far ridge. To meditate in the night watches while the magnificent procession wheels slowly overhead is to know indeed that the heavens declare the glory of the Almighty.

From Jupiter our earth would be but a tiny star. From Sirius it would no doubt be invisible. In the face of such immensity our troubles are "insect cares" indeed. As imagination leaps into depth beyond depth of space, layer after layer of perversity and smallness seem cast off from the spirit. In the silence of the midnight, while the moon's bright plowshare turns a silver furrow through the stubble fields of stars, the countryman taps anew the primal sources which sustain every man.

There is neither beginning nor end to the beauty of the land. There is the quiet majesty of the broad farming valley after a night of snow. There is the nobility of hemlock-skirted mountains white and regal against a winter sky. There is neither shape nor size to the beauty of the land. It may be the flaming horizon, a frost-rimmed brooklet, or a rabbit track beneath the thorn bush.

A winter cloud no bigger than a button, drifting along the broad highways of the sky, can change the personality of the land. Every subtle change in time and weather is reflected in the moody land. And at night, when the hounds of wind go hunting in the heavens, no man knows what the prey or where it takes its flight. The countryman uncovers one ear to hear the cold flurry of dry leaves, or the sudden burst of snow along the eaves, and hastily turns over to dream again of April days.

Winter is generally regarded as the dead season. Spring and summer and autumn wear the colors and stage the pageantry, and in winter all things die until the resurgence of another springtide. Actually there is no dead season. Nature does not perish when she casts off her apparel in the late fall. Gathering her forces to herself, she prepares for new effort. There are no snows so deep but somewhere in the firs the crossbill holds his sign of the sacred legend—no ice so thick but under it the warm current stirs.

The countryman knows that spring is on the way when the seed catalogs arrive. Snug by the fireside, buried





under an avalanche of colorful prospectuses, he can almost smell the fresh-turned loam. Somehow or other his pipe smoke has acquired the aroma of warm April rain. Now comes the time of great decision. Shall he try that new hybrid, pictured so glowingly, or stick to the old reliable Golden Cross Bantam? Shall he order those new sweet peas, or admit he can't grow these prima donnas and let well enough alone?

Brother Groundhog breaks into the news with a bang when February steps across the threshold. Chances are he's dead to the world in his cozy sleeping quarters while all the fuss goes on upstairs as to whether or not he saw his shadow. But long before the groundhog legend was spawned ancient weather seers were saying, "If Candlemas Day be fair and bright, winter will have another flight."

My favorite feathered songster, the songsparrow, was chanting away at his matins when the first February sunlight fell across the hills. I had heard him off and on through January, but on this morning his music was so insistent that I hunted out hiking garb and took off down the valley. Somewhere on the far hillside a Carolina wren had also caught the mood of the morning and traded song for song with my sparrow friend.

High in a tree on the hillside behind the house I discovered the gray paper shroud which had been a tremendous hornets' nest last summer. It hung there above the trail like a Japanese lantern. Other countrymen had also seen it, and someone had wrecked it badly with shotgun fire.

I could not help but wonder how many hornet-hours of labor had gone into the construction of that weatherproof paper house. Hours of patient effort scraping wood fibre from old buildings and fence posts and the tomato stakes in my garden. Countless hours afield hunting and hauling home the spiders and caterpillars and flies which were chewed up into cannibal soup for the fat youngsters in the wheel-like apartments inside that paper walled nursery.

Now the hunter is home from the hills and the masons who plastered up those gray sidings have buzzed off to bee heaven. Somewhere on the hillside, snug under stones or bits of bark, are the few queens chosen to ride out the rigors of winter and start a new crop of artizans to plastering and huntsmen to coursing when the sun again stands high in the noonday sky.

February is quite a month. The countryman pulls and hauls for all he's worth during this shortest month which always somehow seems the longest. In February, with spring just out ahead, there is everything to hope for and nothing to regret. March brings the spring, but it is in February that the dream is born.

On the hillside near the tree which carries the hornets' nest, a clump of bladdernut shrubs has taken firm foothold. The countryman carefully negotiates many rods of slippery footing just to stand there like an overgrown baby and rattle the clicking bladdernut castanets in their paper thin cases.

. . . *The End*



Hound Music

By Horace Lytle

FRIENDS of the writer, and those who have read my articles and columns "for too many years to tell," think of me only as a bird dog man. But I'm a hound man at heart! I have owned both pointers and setters, have long loved them and all that they stand for—but, if truth be told, it's a cultivated taste.

HOUND! The very word is magic. How many of you have read "The Voice of Bugle Ann"? Or seen the magnificent movie that was made from the story? Or sat at night, as I have, in a lonely cabin, lighted only by a great log fire, and listened to the drifting music of the hounds? Whether they be running fox or 'coon, you will dream away the hours and not want any thought of sleep to steal a minute of it from you.

Exactly fifty years ago, with a friend who could hit them, I took my first train trip to hunt quail. This friend took his setter and I had a fine pointer that an older friend had loaned me. This he should not have done—nor should I have accepted. But I didn't know any better then and as for his kindness, I wouldn't know what to say. The fact remains that no man should borrow, nor should any man lend, a fine dog of any breed. Possibly that wasn't realized so fully a half-century ago.

That first, away-from-home hunt holds many memories still. We brought home lots of birds, all of which were bagged by my partner. I hadn't yet learned to hit anything flying, but was middling fair on running rabbits. One night I heard of a hound that could be bought—and buy him I did. This much to the disgust of my pal who had to hunt birds alone for the rest of our stay. But he had gained the use of a second dog, for I had no more time for the pointer.

My close association with canines of various breeds covers something more than half a century. They long



The Basset hound can often make an excellent pheasant dog.

ago won, and will always hold, my deep love and respect. I have known a few individual dogs as close to "human" as anything can be that is denied the use of actual language. I do not believe the capacity of dogs, hounds included, is limited to mere instinct. I think I could prove to the contrary. From long experience, I can tell stories to match any man's—if there be no departure from truth. All of which brings up my pet peeve! There is no need to try guilding the lily, as is too often attempted. Dogs are wonderful enough as they are! I do not believe they can drive a car, fire a furnace, cook a meal, shave you or cut your hair. I know that some dogs are smarter than others—so are some humans.

Nor do I believe any canine jack-of-all-trades can be expected to hold a candle to a top-flight individual of the specialists. No one canine will run coon, fox, cougar, rabbits, point birds, retrieve ducks, whip a fighting bull terrier, out-trail a Bloodhound in finding a lost child, go to ground for badger—or what have you. Yet every now and then, the gullible public is preyed upon by propaganda featuring some new breed that "does it all."

Which brings up a case in point. Many years ago I was solicited to help publicize a certain "do-it-all" breed that was then coming into vogue. I was invited to come up and hunt rabbits over some of these dogs, to "see for myself," and I accepted the invitation. The next morning my host loaded six of his dogs in the car. Then he asked me please to wait just a few minutes—that he'd be right back.

And shortly, true to his word, he was back—*but leading a beagle!* That's something I've never forgotten, for that day the little hound did *all* of the hunting that was done. Not a single individual of the breed on which I was supposed to sell myself showed any indication that he had gone along for anything but the ride! And that, I believe, is how you will usually find it in any such case.

Rabbits withstand the greatest hunting pressure of any game; more ammunition is directed their way than at any other species, furred or feathered. But hunting rabbits without a hound, at least for this writer's money, would be very much like drinking pop—no *kick* to it. The hound for rabbits, of course, is the beagle, with bassets forging forward strongely in recent years.

I am not, and could not be, in favor of hunting deer with hounds in Pennsylvania. But there are other sections where the same conditions do not exist and where hounds are properly legal. Archibald Rutledge, late of Pennsylvania but now back at his delightful ancestral home in South Carolina, hunts his deer with hounds. And in Florida, where deer hunting is also practiced with hounds, the Beagle is the favored deer-dog for that state.

But the hound men of Pennsylvania have plenty of use for their hounds. There is so much other game for which hound breeds, especially the smaller ones, are well adapted. This applies not only to fur—but even to feather. The pheasant happens to be a bird for which the Beagle

can be trained—with the Basset, because slower, perhaps better still. Why, I have a good friend who uses his Bassets for pheasants—and even grouse. I'm not saying that I could myself work up much enthusiasm over trying to hunt grouse with any trailing canine, but I do not hold that same conviction so strongly where the ringneck is concerned. In fact, one of the strongest fascinations of the pheasant is the almost endless number of variations that occur in his hunting.

Herb Kendrick, who writes-dog for GAME NEWS, moved to Pennsylvania from West Virginia. He had hunted both quail and grouse, but had never even seen a pheasant until our first hunt. One bird at which I shot dropped like a bomb. It had flushed wild with no dog near. We were hunting with setters and never did recover that bird. My setter hadn't seen the bird fall. When called over to retrieve, he was half-hearted. More interested in live game than dead, he would not put his nose to ground to try picking up the trail. The more I urged, the less interest he showed. His only thought was to be let alone, to get on out of there and find another. And that's how it finally ended. My shot had wasted a piece of game—which I hate (and we all should) more than anything that can occur on a hunt.

What had happened to that pheasant? I wouldn't know. It might have been stone dead—that's how it looked when it dropped—and we may just have failed in picking it up, especially when given no help by the dog. Or the bird may have been able to run, though not fly, and legged it off in the cover. Oh sure—had "Spot" seen it fall, he'd have worked hard to find it, and might have. But what I'm leading to is that probably a Basset or Beagle would have delivered that bird.

Which brings up something else

These are the dogs which have made history as the "hounds who bark treed." Countless Pennsylvanians consider a well-trained 'coon hound as the best of any breed.



about hounds that always both interests and amazes me: the fact that many of them become good retrievers. It seems almost "agin" nature for them but my friend Carl Smith gets good retrieving from his Bassets and so do many others. One thing is sure: let any game, dead or alive, be on the ground and a good hound will usually find it.

Of course, to hunt pheasants with hounds calls for sturdy legs to keep up. But it "sho-nuff" can be a lot of fun to have a little hound sing on a trail, keeping you constantly warned to "Watch out—it won't be long now!" And all the time you know, whether the bird does or not, that his only chance to elude that keen trailing nose is to flush. In due time the pheasant will come to that conclusion himself—and that's when you want to be close enough to perform. It's not quite like hunting with a pointing dog—but it's sure effective and fun. Besides, there is the mixed-bag angle. Many of us love to eat rabbits. I do! But hunting with a pointer or setter, I won't even look at one. You don't dare spoil a bird dog by showing any interest in fur yourself. That's something you don't have to worry about with a hound. You can take your fun as you find it.

For a good many years I was in the advertising business. One time a man came to see me whose firm was wondering about going into the manufacture of sleeping bags. I had no idea of the potential market for such a product, but was interested in it. Finally a modest advertising campaign was launched. Via the grapevine I had heard that the firm figured they would have to sell 4,000 bags the first year for the campaign to pay. So when the president asked me how many bags I thought we would sell, I announced (just for the heck of it), that I'd be disappointed if we failed to sell 10,000! That almost choked him. It might have choked me if we had failed by too much. Actually we sold 30,000 bags that first year! But that's not what I started to tell.

Down in Mississippi I had a friend with whom I hunted quail every winter. Whit owned a general store in a town so tiny that there was but one other store, a cotton gin, a half dozen homes—and that's all. I didn't think Whit could sell many sleeping bags but wanted to try something out. I've seen it get pretty cold down there at times, when we'd pile on blankets till weighted down. Sleeping bags give warmth without weight. So one time when Whit was visiting me, I sought his cooperation in trying to move a few bags. He said he'd gladly try, and I had a bag shipped to him. I had told him it would be subject to return if he could not sell it.

It wasn't very long before Whit paid for that bag and ordered another. Then another—and another—and another—until he had sold and paid for 25. About that time I went down for my annual hunt and could hardly wait to hear the story on the sale of those sleeping bags.

"Well, I'll tell you how it was," he said. "You know how they run fox at night. Build a fire and sit around it listening to the hounds. One day a fox hunter came in, studied that bag awhile, and finally bought it. Now they all own bags. When the hounds strike, their owners curl up in their bags and enjoy the music all snug and cozy They say it's wonderful."

The mystery of scent in any canine holds greatest fascination. Mere man is none too sure of any of it. We may theorize, but can prove little with too much assurance. It does seem certain that there are many angles from which trailing scent, in the case of a hound, differs from working body scent, in the case of pointer or setter. And in other ways the two overlap. One can lay a trail, of course, for a hound and thus study phases of scent impossible to test similarly in



Photo by Henry M. Blatner

The break-away is always a thrilling moment in a 'coon hound field trial. The hounds are set down on a course over which a drag, containing the scent, has been used.

the case of other hunting breeds.

One of the greatest canine students is Dr. Leon F. Whitney whose specialty is Bloodhounds. He also breeds Redbones and others and is an ardent coonhunter. I've tried to study everything Dr. Whitney has written and one of his most fascinating books is titled BLOODHOUNDS. I enjoyed every word of it but especially his comments on scent. For full value you should read it yourselves, but I'll here give you just one brief quotation: "Several times I have tried to follow trails in the late afternoon when it was dry and have found the dogs unable to do anything. I have tied them out of the sun and then in the evening, after the dew has gathered and the temperature was lower, have seen them run on the same trail they couldn't follow at a walk hours earlier."

That one *gets me!* Apparently the time element of scent is of less consequence than the atmospheric conditions under which it is followed. It would seem that the older the scent, the harder to follow. But Whitney disproves that in the quotation above. What it all gets down to is that anything about canines is full of fascination—and that goes especially for hounds, big or little.

May you all have fullest fun with yours—and *be good to them.*

. . . *The End*

* * *

THINGS YOU MAY NOT KNOW

The fastest living bird or mammal is the humming bird. It has the highest rate of any warm-blooded creature.

The Saga of the Chimney Swift

By Harvey R. Frantz

FOR the past century ornithologists have been searching for the winter home of the Chimney Swift, one of North America's most common birds. Every fall large flocks converge on northern Florida and southern Georgia. Suddenly they disappear, not to be seen again until the following spring.

More than 375,000 of these birds had been banded between 1934 and 1944 but never was a band returned or even reported outside the United States. It was one of nature's mysteries that seemed to defy solution.

A band of hungry South American Indians, an itinerant jungle trader and an alert American engineer finally solved the question that puzzled ornithologists since the early 1800's.

In the late fall of 1943 along a tributary of Napo River in northern Peru a wandering band of Indians noticed numerous small birds hovering over a huge hollow tree. The birds would fly around the top of the tree, then suddenly vanish into the depths. When the last bird had disappeared, the Indians went to work. While some of them climbed up the llana-draped surrounding trees, others collected brush and firewood which they stacked in front of an opening at the base of the tree. The Indians aloft cut palm leaves which were laid across the top of the hollow tree and weighed down with hardwood branches.

When the top was sealed, the Indians lighted the collected material and pushed it into the ground opening of the tree. Dense clouds of smoke issued forth, some curling back around the ground opening but most of it going up and seeping through the leafy roof. Within a few minutes the thud of little bodies falling inside the tree could be heard.

Gathering their game and putting them in palm leaf baskets, made on the spot, the Indians took them back to camp. There they were turned over to the women and children to prepare a form of stew.

Suddenly one of the women jumped up and, running over to the chief, handed him a small aluminum band. Amazed and a bit frightened, he held it gingerly, then dropped it on the ground. Then another band was found, then another. A total of 13 bands were found among the birds killed.

Realizing that it was something out of the ordinary and might be an evil omen, the chief put the bands in his hut. A few months later a trader passing down the river was presented with the bands by the Indians who, although afraid to destroy them, wanted to get rid of them.

The trader, realizing their probable importance to the authorities, took them. He eventually met an American engineer in the field who immediately recognized them as bird bands of the U. S. Fish and Wildlife Service. The bands were turned over to the U. S. Embassy in Lima and in turn forwarded to the States.

The recovery and identification of these bands helped solve the mystery by proving that a portion of the winter home of the Chimney Swift is in northern Peru. The swifts also probably winter in the northern Amazon Basin which would include Colombia and part of Brazil.

It took some hungry Peruvian Indians, an itinerant jungle trader and an alert American engineer to answer the century-old question: Where does the Chimney Swift winter?

. . . *The End*



Maine Boasts Big Bucks

One interesting sidelight on deer hunting "down east" is gaining national publicity. Starting in 1949, the Maine Development Commission has sponsored "The Biggest Bucks in Maine" Club. Any hunter is eligible for membership in this unique club, the only qualification being that he (or she) bag a 200-pound deer or heavier. Shoulder patches are awarded to successful deer hunters.

In 1949, 837 bucks were entered in the club. In 1950, 664 deer qualified. In 1951, 804 bucks of more than 200 pounds live weight were entered and the 1952 take totalled 848. Complete results of the 1953 season are not yet available but by late October, ten members had already been enrolled in the club. The 1953 deer season in Maine opened in five northern counties October 21 with a statewide opening on November 1. The season ended November 30. Maine has for years had so-called "any-deer" seasons during which hunters have the choice of either a buck or an antlerless deer.

Heaviest buck shot in the 1952 season weighed 403 pounds before it was dressed out. Arthur Vieneiri, of North Anson, was the lucky hunter. His deer matched another of 403 pounds for top honors in the club to date, Earl Laviana, of Meridan, Connecticut, shooting a buck of equal weight near Edmunds, Maine, in the 1950 season. Statistics on the 1952 season show 43 deer were entered which weighed more than 300 pounds live weight each. (Live weight is estimated by adding 30 percent to the dressed weight.) Fifty-six women have made the club, one of whom shot a 359-pound buck in 1949.

Number of Summer-Fall Deer Killings Excessive

Game authorities noted a rash of violations in recent months in the ten-county north-central division.

From January 1, 1953, until the middle of November, 109 cases of unlawful deer killing had been successfully prosecuted in that area alone. Almost all of them dated since early July. The number of cases and fines imposed, about $15,000, established an all-time high in this division for the period named.

A revision of the Game Law that became effective July 28, 1953, provides that the unlawful killing of a deer in close season shall, in addition to a $100 fine, bring a mandatory denial of hunting and trapping privileges for a period of three years.

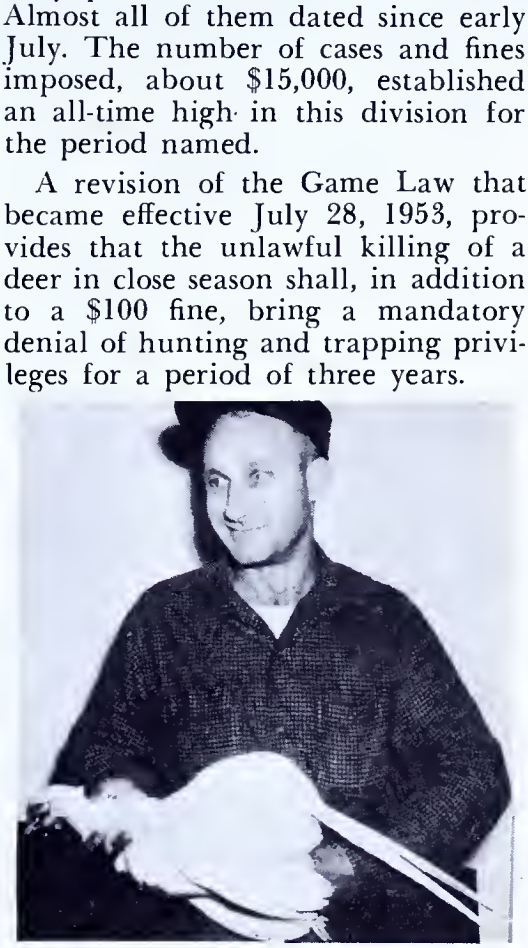


Photo Courtesy Lebanon Daily News

Most hunters hunt a lifetime without seeing one of nature's rarities. But Leonard Cobb, of Jonestown, not only saw but collected this rare, albino pheasant while hunting alone during the 1953 small game season.



Many sportsmen's clubs form game feeding caravans when wildlife needs supplemental feed in winter. The Punxsutawney Sportsmen's Club typifies this commendable action. Members often assist local game protectors in this work. The group shown above distributed almost 40 bushels of corn in three sections of their hunting grounds during January, 1951. Left to right: C. Dawson, 1st V.P.; C. T. Shankoskey, Secretary; G. H. Elenberger, President; Chas. Rhue, Deputy Game Protector; District Game Protectors George Dieffenderfer and George Shirey.

Lack of Winter Game Feed Causes Concern

The problem of natural winter food for wildlife in the wooded northern Pennsylvania areas is causing the Game Commission real concern. Game Protectors and other qualified observers class the present mast crop (nuts) a poor one, far short of that needed to supply the state's wildlife with subsistence during the perilous cold months ahead. Wild turkeys, especially, will need help, even if the winter is only of average severity. Otherwise, the flock may experience a drastic setback, wildlifers and outdoorsmen believe.

The Game Commission has doubled its winter feeding budget, an indication of the way the authorities view the situation. Game men say ear corn is by far the best all-around feed. It provides the sustenance and body heat needed in winter.

PGC Photo by Parlaman

Wire basket feeders, simple to construct, should be placed out of reach of deer. They should be constructed where squirrels will shell the corn for wild turkeys. The Boy Scouts, shown at right, are performing a valuable service in keeping a typical basket feeder filled.



1953 Muskrat Trapping Season Closes January 16

Thousands of trappers who began making their sets for muskrats at the beginning of the 1953 open season on November 28 are reminded that all traps must be lifted by 12 noon, January 16, 1954. The muskrat, an aquatic rodent, is much sought for its dark, glossy brown pelt. It is the most abundant furbearer in Pennsylvania and provides trappers with their greatest cash return. Muskrat populations are reported to be about normal in the state and a good take of the valuable animals is expected. Unlike the sagacious mink (trapped from November 9 to January 1), the muskrat is more easily trapped. A large percentage of those seeking the "marsh rabbit" are farm boys. To them, the thrill of trapping and the desirability of dollars in their jeans provide plenty of incentive.

Emotional Control Would Prevent Many Hunter Casualties

Authentic reports of hunter-gun casualties that occurred during the early days of the 1953 small game season are arriving at the Game Commission's central office. They provide facts whereby the authorities determine which ones should be attributed to firearms in the hands of persons hunting wildlife. Some deaths classed as "hunting fatalities," merely because they occurred on a hunting trip are not counted. Examples are: heart failure that could have claimed a victim during any period of overexertion, or the automobile fatality enroute to or from the hunting ground.

Apparently there were the same types of unnecessary shootings early in this year's small game seasons as in previous years. It's the same old story, the "it can't happen to me" individual who does some careless or stupid thing with his gun.

Commission Purchases New Game Land

Shortly before the opening of the 1953 small game season, the Pennsylvania Game Commission acquired title to about six square miles of mountainland in the Pocono Mountains in Monroe County. Beginning October 31st, sportsmen had access to this additional public hunting territory.

The tract will be known as State Game Lands No. 221. It is, for the most part, located west of Highway No. 90, which lies between East Stroudsburg and Mountainhome. A main public road into the new game land leads westward from the village of Cresco.

Formerly known as the Howlett Estate tract, Game Lands No. 221 has good populations of deer, bear, grouse, gray squirrels, snowshoe rabbits and raccoons.

Fishermen also are happy about this purchase. Four trout streams, all tributaries to the famous Broadheads Creek, flow through the newly-acquired game land, offering good angling.

Rabid Bat Bites Woman

In the late winter and spring of 1952 Pennsylvanians were much concerned over a rabies epidemic in wild animals and dogs that endangered humans as well as livestock.

With the situation under control and folks back to normal pulse for over a year, suddenly a new twist. Last October, a woman in Boiling Springs, Cumberland County, was attacked and bitten by, of all things, a bat. Laboratory analysis showed the little creature was infected with rabies, and its victim underwent the severe treatment for the disease. This is only the second case of a bat carrying the disease to be reported in the United States. Health authorities stressed there is no evidence of a rabies epidemic in bats.

Photos Courtesy Pottsville Republican

Their antlers locked in a battle to the death, these two buck deer were found along Pine Creek, near Valley View, Pa., by boys at play in late October. Shown above are, left to right, Fritz Harner, who furnished the truck to haul out the deer, District Game Protector Ralph Shank, of Pine Grove, and Paul Wiest, of Sacramento, Deputy Game Protector. Below is a close-up of the two deer showing how the antlers became locked. It is believed the larger deer, an 8-pointer, inflicted a fatal wound behind the ear of the smaller 10-point buck. Although buck battles are common during the mating season, it is unusual for these fights to result in death for either of the contestants.



Game Law Violations and Fines

The tabulaton of game law prosecutions and penalties brought during the Game Commission's fiscal year ending May 31, 1953, reveals a total of 5,041 prosecutions, for which $161,735.01 was collected in penalties.

This compares with a total of 4,645 prosecutions and $147,382 in penalties collected over the previous fiscal year. In other words, there were 396 more prosecutions, and $14,353.01 more was paid in fines last year than the year before.

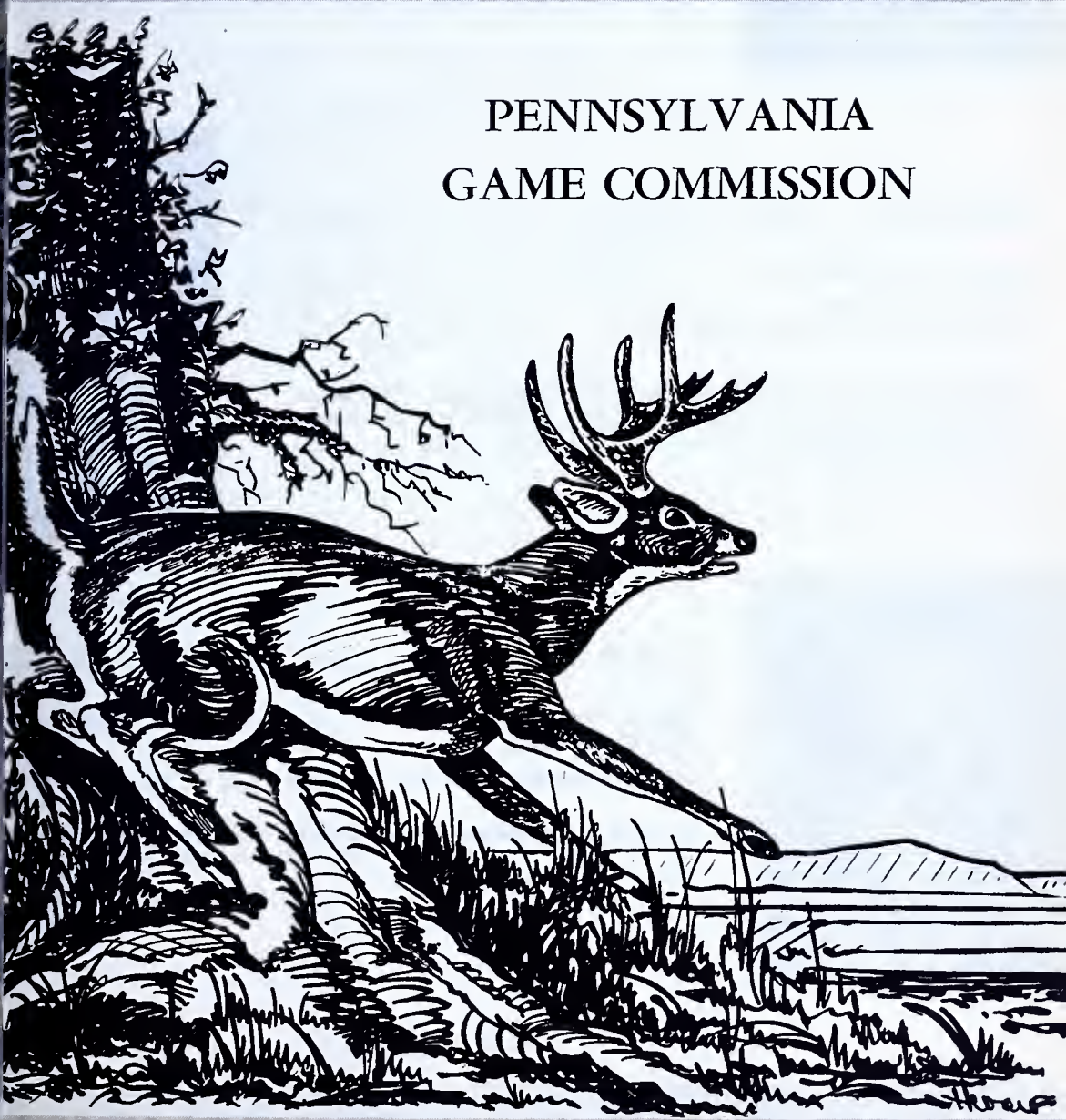
With the exception of the year 1949-50, when $200,888.35 was collected for game law infractions in Pennsylvania, last year's fines aggregated the highest amount ever collected in a similar twelve-month period.

IN HONOR

25 Years

OF FAITHFUL SERVICE

PENNSYLVANIA
GAME COMMISSION





25 PENNSYLVANIA YEARS



S. EARL CARPENTER

District Game Protector
Doylestown
Game Commission Service 27 years

Full time per diem service in various field assignments from July 1927 to June 1, 1936; Bounty Claim Clerk, Harrisburg Office and Traveling Game Protector from June 2, 1936 to January 1, 19[illegible] when he was promoted to his present position.



RODMAN C. CASE

District Game Protector
R. D. No. 1, Troy
Game Commission Service 25 years

Served as Assistant Game Protector and Traveling Game Protector from November 1, 1928 until March 1, 1937 when he was promoted to his present position.



SAM B. REED

District Game Protector
Pine Grove Mills
Game Commission Service 26 years

Served as Game Refuge Keeper and Traveling Game Protector from May 16, 1928 to January 1, 1939 when he was promoted to his present position.

ME COMMISSION

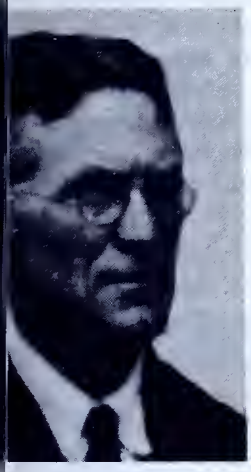
UB



LLIP S. SLOAN

ict Game Protector
). No. 1, Dalton
e Commission Service 26 years

d as Assistant Game Protector from June 16, 1928 to September
34 when he was promoted to his present position.



JOSEPH M. CURTS (Retired)

Former District Game Protector
St. Petersburg, Fla.
State Service 26 years

Served as Game Protector from August 16, 1913 until termination of service with the Game Commission October 21, 1931. Prior service with State Police from December 15, 1905 to August 15, 1913.



BROSE GERHART (Retired)

ner District Game Protector
derton
ne Commission Service 25 years

ed as Game Protector from November 1, 1926 until he retired
ber 3,.1951.

Waltonians Establish New Youth Conservation Achievement Award

A new program of recognition of youth achievement in natural resource conservation has been announced by the Izaak Walton League of America, the Wildlife Management Institute reports. The first national awards, to a boy and girl of 'teen age, are expected to be made in Chicago in conjunction with the League's 32nd national convention on March 11, 12, and 13, 1954.

The awards will consist of trophies and vacation trips to national parks and conservation "crisis spots." The League's national convention immediately follows the 19th North American Wildlife Conference which will be held at Chicago's Palmer House on March 8, 9, and 10.

Elimination contests are to be held in the states, and the state winners—a boy and a girl each—are to attend a youth rally at the League convention, at which time the national winners are to be chosen.

The annual event will be open to any boy and girl between 13 and 19 years of age, but the League expects to work closely with existing youth organizations that provide conservation instruction and incentive in their present program. An advisory committee is being built up to help in the final determination of minimum standards the boys and girls will be expected to meet in order to be considered in the judging, which is to be done at the state level by a Governor's Committee, and at the national level by a special committee selected by the League.

The plan is described as not intended to duplicate any existing program, but to supplement, and to provide additional incentive to the young people of the United States to participate in natural resources conservation, restoration and management activities.

Hunters Commended for Fire Safety Record

During September and October, 1953, when lack of rainfall presented a mounting fire hazard, not one single forest or field fire was attributed to hunters. Yet at various times during this record drought period, some 10,600 bow and arrow deer hunters, an estimated 15,000 woodcock and dove hunter, and about 40,000 waterfowl hunters were afield. Logan J. Bennett, Executive Director of the Game Commission, has commended sportsmen for this fire safety record.

1953 Duck Stamp Sales Reach New High

More Federal "duck stamps" were sold in the fiscal year that ended June 30, 1953, than in any previous year since the first issue in the series went on sale in 1934. According to Secretary of the Interior Douglas McKay, a total of 2,296,628 stamps of the 1952-53 issue was sold to hunters of migratory waterfowl, conservationists, and philatelists. This total represents an increase of 128,861 over the 1951-52 figure.

Sold for $2.00 at post offices, the proceeds from duck stamp sales help finance the Federal Government's waterfowl refuge and law enforcement programs. Every individual over 16 years of age who hunts migratory waterfowl is required to have on his person a stamp of current issue with his signature written across the face.

For the fifth straight year, California headed the list, with a sale of 214,456 stamps, an increase of 41,320 over the previous year. Other high-ranking States in which more than 100,000 stamps were sold included Minnesota, Texas, Michigan, Wisconsin, and Illinois. In Pennsylvania, sales totalled 43,931 for an increase of 3,295 over the previous year.



Weasel Trapping

By Larry J. Kopp

WHILE weasels are profitable and interesting to trap, they are not one of the easiest animals to catch. As a matter of fact some trappers feel that a wise old weasel is almost as difficult to catch as a fox.

There are some peculiar aspects about weasels which must be well understood before one can expect to be successful. For one thing, weasels are noted for their preference to fresh food. They are quite destructive because of this. That is they are not likely to eat tainted meat as would a skunk or opossum, and while a skunk might make several meals out of one kill, the weasel usually does not.

This preference to fresh food presents a problem to the trapper. This is particularly true during mild weather when flesh bait becomes tainted within a day or so after baiting the trap. It is true that such tainted meat attracts weasels, but somehow it does not hold the weasel's interest long enough to be caught.

A trapper would therefore do well to try and keep his traps baited with fresh bait, even if it necessitates operating a trapline for mice along with other animals. If a trapper really wants to do some serious weasel trapping, it should not be too much trouble to set out a dozen or more mice traps expressly for mice which may be used as fresh weasel bait.

The value of scent in weasel trapping is almost as important as in fox trapping. While a recently killed

Photo by Karl Maslowski

Young weasels, shown at the den entrance, will grow up to be splendid examples of wilderness wisdom.



mouse will attract a weasel, it won't attract a weasel from any great distance. Therefore a strong scent, or weasel musk will add much to your success. Such scent may be obtained from trapping supply dealers at reasonable cost, and a one ounce bottle will go a long way since you need only use a tiny drop of scent at a set. It is also profitable to save the sacs of weasel musk from those which you catch, and use this at some of your sets. It is not necessary to use any scent at a set which has already caught a weasel because the trapped weasel will leave enough scent around to last for sometime.

There is also the question of just where weasel sets should be made? Unlike most other fur animals, weasels do not leave many signs around which would indicate their presence. In the absence of snow, finding weasel signs is one of the most difficult problems confronting a trapper. Tracks are about the only definite signs which a trapper can depend on. But since weasels are so very light in weight, even tracks are difficult to detect in the absence of snow.

It is my belief, and I think there are others who will agree with me, that weasels often live, and migrate in what we might describe as colonies or families. I know of one trapper who accidently caught eight weasels in traps set for muskrats along a limited stretch of stream, while neighboring trappers did not catch any in a similar manner. In my own case I recall that I once caught six weasels quite by accident, at a set made for raccoon on the headwaters of a tiny mountain run.

It is well known among experienced trappers that where you catch one weasel, you usually catch more in comparatively rapid succession. Of course, it is the scent which the first weasel leaves at the set which attracts other weasels but the sudden and short period of time in which weasels are frequently caught strongly indicates that a family has suddenly migrated into the area.

Weasels are exceptionally fond of following waterways, large or small. Good sets can also be made in the vicinity of woodchuck holes, rock piles or other rocky areas, and along thick fencerows. The common Number One trap and "cubby holes" or similar sets are the proper combination for weasel trapping. But there is another excellent weasel trap which is not so well known. The Animal Trap Company makes a trap especially for weasels. It resembles the ordinary trap used for barn rats although the bait holder is a wire hook-like affair made so that a weasel cannot take the bait without springing the trap.

In using this trap, no special effort need be made in preparing the set location. It is nailed to a fencepost or tree, approximately eight inches off the ground. This causes the weasel to stand up on its hind legs in order to reach the bait. This trap is easy to carry, easy to set, and best of all, it can be set just about anywhere.

Care must be taken in nailing them to fenceposts. It is best to use nails which fit neatly into a hole previously drilled through the wooden base.

The amount and size of the bait which should be used is more or less regulated by how much weight the trigger will hold. When the bait is too large or heavy, the trap cannot even be set. I would say a small mouse will make bait for two sets, half a mouse to each.

Larger animals are not caught in these traps although skunks, opossums, or raccoons sometimes trip the trigger release. When you experience much trouble with these animals accidently springing your traps, it is a good idea to place the traps higher up the tree or fencepost. Remember that a weasel can climb almost as well as a squirrel.



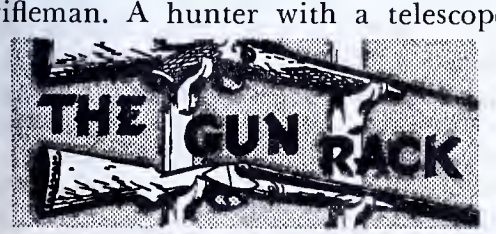
Long Shots and Long Range

By Ed Shearer

"HOW far is yon rock?" queried old Bert. We were looking across some rugged country that would be called a canyon in the west. Knowing my rifle's zero, also having it equipped with micrometer receiver sight, and Bert doing the spotting with binoculars, the distance was determined to be no more than 275 yards.

This was a particularly good spot. More than one buck had fallen victim to the 280 and 270 there but our percentage would have absolutely ruined Ted Williams' batting average. The smallest front sight was much larger than the deer. It required binoculars or the sun shining on the antlers of a pretty fair buck, to know what you were shooting at.

The above is a sample of long range shooting in the woods thirty years ago. It was pretty much a hit or miss proposition, even for a skilled rifleman. A hunter with a telescope sight in those days was greeted with ridicule or suspicion.



Today that same shot could be made with some amount of precision by a good rifleman with proper equipment. The development of the modern hunting telescope sight and improvement of accuracy in our rifles and ammunition have done much to take the gamble out of ordinary long shots—say 200 to 300 yards. You will see more scope sights and calibers like the 30-06, 270 and 257 in Pennsylvania than any other state east of the Mississippi River. There are several reasons for this. The character of our hunting country has undergone a radical change in the last thirty years. The deer herd and the crown stage of our timber has practically cleaned out the undergrowth in many places. A ridge on which thirty years ago you would be lucky to see thirty yards may now give shots at from 150 to 200 yards.

Changing cover conditions have created two schools of thought among hunters in Pennsylvania. We have the brush poppers who regard anyone claiming to have killed a deer

at over 150 yards as a first cousin of Aninias. With low velocity rifles, generally equipped with open sights, they have some merit in their viewpoint. At the other extreme, we have the brothers gifted with a fiction writer's imagination. They never kill any deer at less than 300 and speak glibly of 500 yards. So in the interest of newcomers and some not so new, let us take this long range shooting apart and see what gives.

Boiled down, it is largely relative, dependent on the capabilities of the rifle, the sights and the man shooting it. For example, I use a ¾ magazine carbine shooting the 35 Remington cartridge in thick cover. With the rather coarse sights I like my shots under 100 yards and still better at 25 yards. With this combination 150 yards is getting distinctly in the long range class for me. With another rifle, a 257 equipped with a four power scope, I will take a clear standing or walking shot at 150 and long range starts at 250 yards from a good shooting position. So before trying to kill our deer across a couple of townships let's decide on just what may be considered as long range.

I believe a distinction should be made between a long shot and long range where other factors in addition to good holding and trigger squeezing determine the success of the shot. Defined conservatively it is any shot beyond the point blank (so called) range of the rifle being used. For clarity let us assume this is any range where the bullet does not raise or fall more than 4 inches from the point of aim.

Thus with an iron sighted rifle of the 30/30 class sighted to put the bullet at point of aim at 150 yards, any point beyond about 190 yards can be considered long range due to bullet drop. With a scope equipped 30/06 using the factory 180 grain bullet and sighted to strike the point of aim at 200 yards, anything over 250 yards is long range. Sighted for 250 yards with the factory 150 grain bullet, long range is boosted to mean anything beyond about 290 yards. This figure will also apply to the 300 magnum with the 180 grain bullet. With a scope equipped 270 sighted for 275 yards, long range would be beyond 325 yards. When you come to those Super big game rifles throwing heavy bullets at still higher velocities, such as the Weatherby line of 270, 7 MM, and 300 magnums, the 4 inch bullet drop will take you out to the three hundred and fifty yard mark.

Here it is well to make some reservations. Other factors such as rifle accuracy, wind and the ever present human error to say nothing of the generally half frozen condition of the hunter, makes anything over 250 yards long range in my book. The size of the animal makes a big difference. A long range shot on a deer would just be a long shot on a moose.

So in long range shooting on accurate, flat shooting rifle, equipped with a scope sight of good definition, is a must. The hunter must see exactly where he is holding. Then the combination should be sighted in for the longest possible point blank range, so the rise of the bullet above the line of aim will not cause mid-range misses. The bullet raise should not exceed 4 inches. But the less guessing a hunter has to do on holding over, the more meat he will put in the pot. For example a 30/30 rifle sighted for 100 yards, at 200 yards with its 9 inch drop would probably give you a miss. But sighted at 150 yards it would be frying meat for supper.

You should remember that all new rifles need "tuning up" to deliver long-range accuracy. First, the rifle should be shot enough so that the recoil will bed the barrel and action firmly in the stock. Then the screws can be kept tight with some degree of permanency. Sometimes the bedding must be experimented with. Ammunition is a big factor. Some rifles do all right with factory am-



Typical of the many young sportswomen who are finding healthy recreation in Penn's Woods is Miss Jane Bradley, of Lititz. She is shown above with her "first" deer, bagged n Potter County during the 1950 season.

nunition while others require hand oads especially designed for them. A ew calibers are factory under-loaded nd take heavy hand loads to bring ut their long range capabilities. An xample is the 257, the ballistics of hich can be boosted 10 percent with afe pressures using 4350 powder.

The modern hunter has a fair selection of rifles and cartridges that are apable of delivering long range accuracy. In calibers, the 300 magnum, he 30/06, 270, 7 mm., and 257 have hat it takes. They can be had in the Winchester Model 70, Remington Models 721 and 722, Husquarna, and FN Mausers in over-the-counter rifles.

One very important consideration hich must be taken into account hen firing long range shots is that ew bullets will expand reliably in ame hit at ranges over 350 yards. This means who must depend on penetration and you must hit a vital spot. Here is a real test of your good judgment and sportsmanship. Does your ability give you a reasonable chance of a vital hit? Can you get follow-up shots if necessary? If not, pass the shot and save some animal from a lingering death.

. . . The End

LOST

An H-R Revolver, .22 caliber, Manufacturer's Number L-4123. This revolver was lost on the James T. Showers and John Straub farm in Clarion County in early November. Any information concerning the weapon should be sent to the owner: Lavern Bowser, 61 First Avenue, Franklin, Pa.

What Price To Pay For A Beagle Pup

By Dave Fisher

LIKE most writers, I'm always leaving myself wide open for a "fast, straight one." But I'm going to try an answer to this question of the proper prices to pay for a beagle puppy and I even believe these facts and figures would apply to most any of the hunting dog breeds.

The first thing to remember in buying a beagle (or any hound for that matter) is to BEWARE of the cheap hound and the man who offers you such. Good hounds are not cheap. If you are offered a beagle at a cut-rate price, believe me the quality will be cut too. Of course, there is the rare exception. You can't always be guided by what you read in an ad, either. The thing to learn before you buy is the breeder's reputation.

Being a small scale breeder myself, perhaps some will say that I have an axe to grind or that I am biased in my opinions. Nothing could be further from the truth. In the beagle field I think that most breeders are selling their product way below cost. And I've never heard of anyone getting rich running a breeding kennel alone. As a breeder, if I would make a few dollars profit at the end of the year, the money would be spent in trying to improve the breed; there is always room for improvements.

First, let's look at the cost of producing a puppy, taking as an example an average breeder with a modest kennel and runs. These have cost him about five or six hundred dollars. He has four brood matrons, perhaps one Field Champion and these are valued, let's say, at $150 each for the matrons and $350 for the Champion. He has other equipment worth $100, making a total investment of about $1,500. He may also own a Field Champion Stud worth $500 and another Field winning male (but not yet a Champion) that is worth $200. Now we have an investment of $2,200.



Next let us assume that this breeder raises 30 puppies per year and sells them at $30 each. That's a return of $900, a handsome return on the original investment, right? But as the old darkey said, "De ducks got most of my cotton crop." First, we've got to "de duck" the seed, then "de duck" the labor, and when "de ducks" got through, he didn't have anything left. So let's take a look at the cost of producing said $900 worth of beagle puppies. Here are but a few of these costs as I see them: Interest on the investment (at 6%)—$132; kennel license—$20; heat and light—$50; feed—$350; stud fees—$240; veterinary services—$150; advertising—$150; express costs—$60. This totals $1,152 which leaves our friend in the hole $252 on the 30 puppies. And we didn't consider his work in feeding and caring for them, the many sleepless nights spent with a brood matron in whelp, or caring for a sick dog. Nor did we mention straw for bedding, material for cleaning and dis-



A beagle family group looks for an owner who will give them good care and kind attention. Breeders have a considerable investment in feed, kennels, and brood stock and expect a fair price for their product.

infecting the kennel, repairs and upkeep, or other expenses.

Let us consider one of the larger costs in more detail, feed for instance. This amounts to more than the average person thinks when you have a breeding kennel. Even feeding commercial feeds purchased in 500 pound to ton lots, the cost will run around $11 per hundredweight. When you have to feed horse meat at $.25 per pound, your expenses quickly rise into a much higher figure.

When selling a puppy, most breeders have a price scale which values females at $25 and males at $30. Instead of setting a price on a puppy by quality, they set it on sex which I think is a mistake. So many sportsmen have peculiar ideas as to why they should NOT buy a female that there is a greater demand for males. Perhaps that is the reason. But if a breeder offered me a puppy for $15—$20 and gave me a sales talk with it, I would be a bit doubtful about what I was getting. Incidentally, when I speak of a puppy, I mean a dog between the age of six to twelve weeks, certainly not more than 16 weeks old. I classify a dog in the four to 12 month age bracket as a "young dog" and a beagle at five to eight years as being in his prime.

A puppy of ordinary breeding, perhaps some Champions in the third to fifth generation ancestry and the first and second generations being local bred hounds with fair repute, should be worth $25 or $30. Where either parent is a Champion, it would seem to me that $45 to $75 would be a fair price and where both Sire and Dam are Champions, I would not consider $100 to $150 as being excessive. Of course, breeding is not the whole consideration in buying a dog but the above prices seem fair for all except the odd individual

puppy that is "out of line." When a puppy is too poor to be of use to anyone, he had better be destroyed rather than have some uninformed person use it for breeding on the strength of the pedigree although pedigrees are important in buying a dog. They show that records have been kept and give you a much better chance of getting a good hound instead of a mediocre one.

So, as a sportsman, don't fly off the handle when you hear the prices reliable breeders set on their products. Remember that most breeders strive to produce good dogs more as a hobby than a "get rich quick" scheme. It requires many hours of labor and a considerable investment in time and money to give you the kind of beagle that will provide eight or nine years of the kind of fun you are seeking. Let me cite just one example here. Prior to the 1952 hunting season, I had a friend write me and ask for a trained hound. I replied that I had a good one, that because we were friends of some years standing, that I knew he loved to hunt and loved dogs, and, finally, that I knew the dog would have a good home and not be sold from pillar to post, I would let him have a dog for $85. This hound was going on nine years of age but he could run like a three-year-old, was healthy and in good condition. My friend wrote back that he thought the price was too high, that he had bought locally for $50. That was alright with me. But just for fun, I started this same nine year old hound that year in Sanction trials. He won or placed in every trial in which he was set down for a year and we also bagged a good many rabbits with him that hunting season as well. I refused to sell him to anyone after that and turned down offers of $500 for him. He was killed by a hit-run driver this past summer, while chasing a rabbit for me in training season, and I frankly admit I shed quite a few tears for him. I still have his trophies, ribbons, and pictures in my den. I have four puppies by him that you cannot buy for love nor money.

If you want to buy a cheap puppy, you can surely find one. But don't ask the reputable breeder for the "flower of the flock" at the minimum price. It's best to buy a puppy of good breeding (showing up in the first three generations of his pedigree) and train it yourself. Don't wait until just before the hunting season to do it, either. Buy a pup at any time of the year. I've always advocated purchasing a dog in the winter or spring months, getting acquainted with it, and running it in the spring before the training season ends. And when you buy, get a copy of the dog's pedigree and his AKC registration certificate.

I know—I've heard it many times—that papers won't make a dog hunt. That's a true statement but don't overlook the fact that by getting papers you are getting a hound with something back of it that you "know" about and don't have to wonder about. It's not what you pay—it's what you get for what you pay that counts. Buy from a reputable breeder, pay a fair price, and give your pup or young dog a chance. You will never regret any amount of time or money you have spent.

. . . *The End*

LOST

A registered female beagle during first week of 1953 small game season while hunting in Franklin County. Kennel License No. 37; red and white; scar under side of jaw; 13 inches high; copper-colored eyes; 8 months old. Any information on this dog should be sent to her owner: Mr. Stephen M. Shaner, Fannettsburg, Pa.

Insect Engineer

By Keith C. Schuyler

A NOT uncommon sight for woodland hunters when the leaves are gone is the naked nest of the white-faced hornet, suddenly prominent against the skeletal background of sleeping trees.

It always seems to hang precariously on a limb or twig, like a forgotten football, somehow impaled or caught by the limbs, with the leather now grayed and peeling from the impact of the weather. However, the hornet's nest is actually a marvel of engineering and is for the moment, at least, a safe tomb for many of the busy creatures that inhabited it during the warm months.

For, only the queen survives through the long, cold winter.

The hornet's nest is an elaborate affair made of paper manufactured by the hornet from the fiber of wood. It may be the size of a large grapefruit or a bushel basket. As many as 15,000 hornets may be found in a single large nest.

Her highness, the queen, begins construction of the nest alone and raises the first workers. They take over construction as soon as they are able, and the queen returns to egg laying. She too serves as housekeeper and keeps the nest clean in the early stages, but this duty is taken over later also by the workers.

The interior of the nest is a honeycomb of cells, built tier upon tier and opening downward. This apartment house is protected from the weather by heavy layers of paper, delicately lapped to ensure warmth and protection from the rain. The entrance is at the extreme bottom.

Known as *Vespa maculata,* the white-faced hornet is omnivorous, devouring fruits, honey and insects of many kinds. The queens are one and one-half inches long, workers one inch and drones one and one-quarter inches in length. In color, the hornets are black with white markings on the body and face. The antennae are rust beneath.



The well-insulated paper apartment house of the hornet is a feat of engineering skill. This one was cut away to show the interior.

When resting, the wings are held folded back lengthwise. The queen may be seen most commonly away from the nest in the early part of the season when she is the most active. Then, as the population of the nest increases, she spends more time at home and the workers take over the outside duties throughout the summer. Last to have their fling outside are the drones who may be seen chiefly in the fall before cold weather spells their doom.

Although the white-faced hornet is not aggressive during his normal pursuit of food throughout the area near the nest, he becomes vicious when anyone or anything appears to be threatening his home. Sting of the

hornet is severe and extremely painful. An excessive number of stings can be dangerous to human life.

However, it is rarely that anybody is bothered by the hornets to any degree, especially in woodland areas. For, when foliage is heavy, the nest that shows up so plainly when the leaves are gone is difficult to find.

A hornet develops to the adult stage in from twenty-four to thirty-three days after the eggs are laid in the nest by the queen. They hatch in from five to eight days, and the next nine to twelve days are spent in the larva stage. From ten to thirteen days more are spent in the pupa stage before the adult emerges.

First to be produced are the workers, followed by the drones. Last to be born are the new queens, and mating takes place soon after the males appear.

Although a friend to man through the destruction of countless harmful insects, the white-faced hornet can become a pest where honey bees are raised since he will kill this valuable worker for the honey it carries. Mouth parts of the hornet are of the chewing-lapping type.

Whatever his standing in the economic picture, the white-face is an interesting creature who must be admired for his industry and his engineering skill. His nest will always be a source of interest to nature students and a friendly guidepost to hunters and hikers when the leaves are down and winter is king.

. . . *The End*

Novelty Shoots



By Tom Forbes

MONOTONY probably drives more archers into retirement than age or any other factor. Over the years a surprisingly large number of archers have laid aside the bow because of lack of variety in the shoots conducted by the local clubs.

When a club offers nothing but the opportunity to acquire an Expert A rating and planning is directed solely to that end, the average bowman loses interest in tramping the same course and shooting at the same targets day after day. The only objective is the possibility of picking up a few more points to increase the total score for the round.

For many of us an Expert A rating is beyond our reach and so we tire of the same old grind and quietly drop out of the picture. The turnover in club members is entirely too high and serious thought should be given to develop a program that will be attractive and retain the interest of the old members. A sport which we had hoped would be an enjoyable pastime for all the members of the family has gone sour and we are at a loss to know exactly what has happened to turn us against the sport.

To run a successful club, to hold and to increase the membership, club officials must revise their thinking. The important unit in a successful archery club is the family and all club activities must be planned with the entertainment of the family the primary objective.

In these days of high prices, cost of entertainment can take a large bite out of the average budget. Archery is a relatively inexpensive sport and one in which all the members of the family can participate as a group. A club which plans its programs to



Photo Courtesy Lenze Studio, St. Marys

Clayton Shenk, right, president of the State Archery Association, bagged his first deer with bow and arrow while hunting in Cameron County during the 1953 special archery season. Shown with the successful archer are District Game Protector Norm Erickson, of Emporium, and Thos. D. Frye, former Executive Director of the Game Commission. The animal hog dressed 99 pounds, was hit at 38 yards with a 35 pound bow, and traveled less than 100 yards before it dropped dead. The arrow punctured the top of the heart.

provide sport for the entire family need never lack for members.

Perhaps we would inconvenience a few hot-shots, but let's stop shoving the ladies and the juniors into the background. As an innovation let's have the family shoot as a team in a club shoot. Improvise a little and interest in shooting will show a decided improvement. Any father will get a lot of pleasure from shooting the course in company with his family. Combine the scores of the individual members of the family and divide the total by the number of members in the family to get a "Family Score" for the round.

Shooting the same unit of a field course time after time is not a fair measure of a bowman's skill regardless of his score. If you want to cut the Expert A's down to size put on a Novelty Shoot at targets to which the members have not become accustomed.

Several novelty targets which provided plenty of fun for both novice and expert shooters were provided recently at one of the sportsmens clubs near my home. They held a free open shoot at a regular monthly meeting of the club. The shoot followed by a movie on archery in the club house was sponsored by a local merchant who provided prizes for the winners and food for the bowmen and spectators following the showing of the movie. The winner, using a sight, shot a score of 23 out of a possible 50. All targets were shot at unknown distances.

TARGET NO. 1—Twenty yards. This target consisted of two eight inch diameter balloons each suspended from a string thirty-six inches in length. They were pinned to one of the practice butts. A light breeze kept the balloons in motion.

Scoring was a variation of the

method used in the Broadhead Round.

1st arrow.....a hit.....5 points
2nd arrow.....a hit.....3 points
3rd arrow.....a hit.....1 point

If an archer scored with the first arrow he did not shoot the other two. If he scored with the second arrow he did not shoot the third.

TARGET NO. 2—Thirty Yards. Three life size crows made from light plywood. They were placed on a replica of a three strand wire fence, one on each wire. A strip of wood one-half inches square was nailed to the back of each crow at approximately the mid-section and a one and a half inch square block of inch wood was nailed to the tail. With the tail weighted in this manner the crow will sit on the wire.

TARGET NO. 3—Fifteen Yards. This target consisted of a regulation clay bird used in trap or skeet shooting which was held in a wire rig made from a coat hanger and bent in the form of a pendulum eighteen inches in length. The pendulum was suspended from an arrow shaft inserted horizontally into a straw butt. For each shot the clay bird was raised to the nine o'clock position and released. Nice timing will break the clay bird as it swings in its arc and provide quite a kick if you have never tried this stunt.

TARGET NO. 4—Fifty-five Yards. A running deer silhouette. From a convenient tree stretch an inclined wire over an A frame at a distance of approximately fifty feet from the tree. The A frame should be about four feet high and the wire should be fastened firmly to a stake driven into the ground. Be sure and stretch the wire taut to insure that the target will run briskly down the wire. Build a wooden frame of one inch by two inch material approximately eighteen inches in height by twenty-four inches in length and cover the frame with thin plywood. Attach two trolley wheels to the frame so that the rig will run freely along the wire. Fix a stop near the A frame on the wire so that the rig will not crash into the A frame at the end of the run. Attach a light line to the rig and use it to pull the target or rig up to the starting position after each run. As a safety measure pull the target back to the starting position by walking away from the tree. Do not depend on the tree for protection from arrows shot at the moving target. "Stay Clear." Be sure that the grass is close cut at the rear of the target area in order to facilitate recovery of the arrows.

TARGET NO. 5—Ninety to One Hundred Yards. A standard forty-eight inch circular target face is pinned on a straw butt located between ninety and one hundred yards from the shooting peg. An arrow striking any portion of the target face *inside* the outer black line shall constitute a hit. It is not unusual for an expert archer to underestimate the distance to such a target by as much as twenty percent.

Scores of all contestants improved the second time they shot around the prescribed layout.

Prepare numerals one to five inclusive, ten inches high, black lettering on a white background to mark the order in which the targets are to be shot and five shooting pegs eighteen inches in length, painted white and numbered one to five inclusive to mark the shooting positions for each target. Choose the location of the targets and set up the course carefully so that participants will not have to walk across the line of flight to any target or in the area back of any target as they progress from one target to another during the competition.

I have purposely avoided high angle shots at flying targets. They offer little chance for a hit to the ordinary bowman and too much time is lost retrieving arrows. Arrows fletched especially for this type of shooting are not ordinarily found in the archers quiver.

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
WILBUR M. CRAMER ..... *Asst. to Exec. Dir.*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart. Supervisor 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

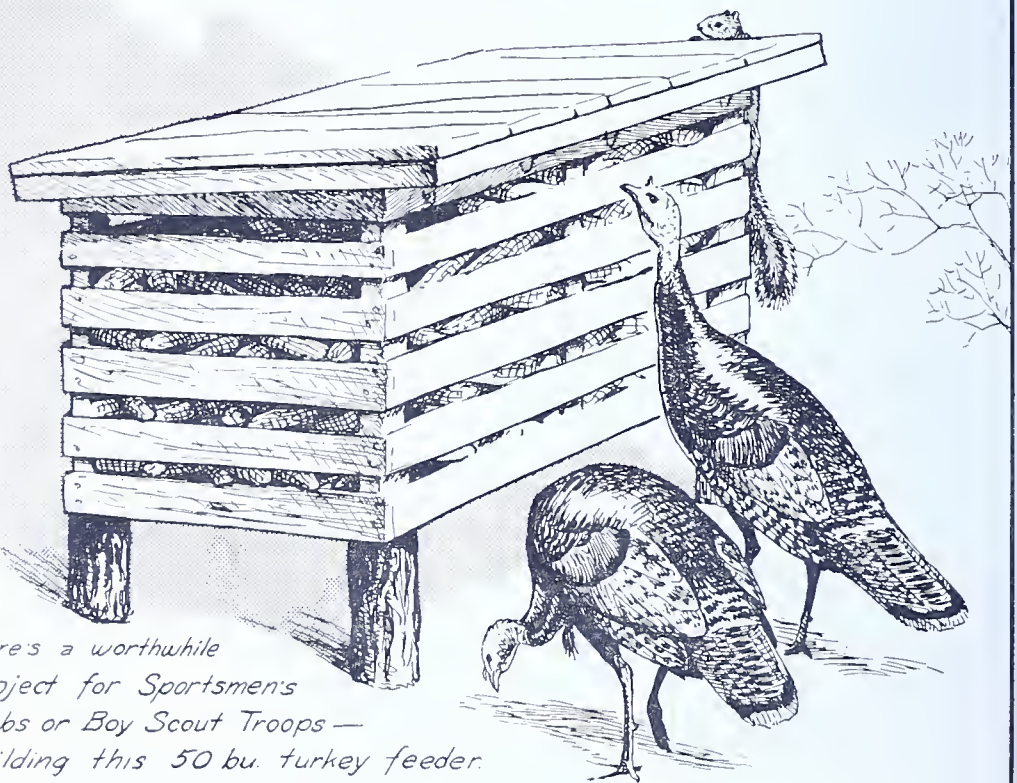
SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 14 W. 1st St., 2nd Floor, S.S., Oil City. Phone: 4-6281
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

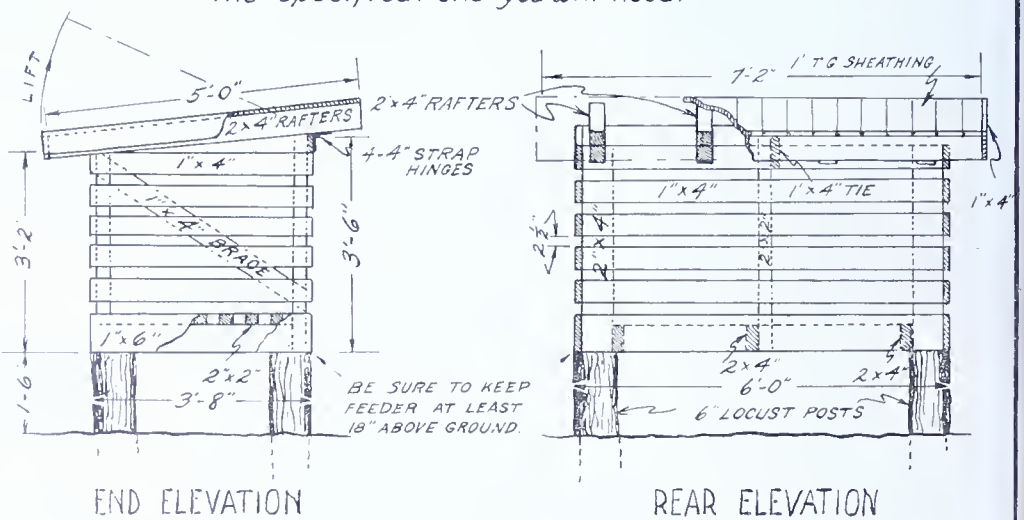
SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

"CORN ON THE COB"

TURKEY FEEDER



Here's a worthwhile project for Sportsmen's Clubs or Boy Scout Troops — building this 50 bu. turkey feeder. Erected along a spring run where turkeys customarily travel it will fill their needs when natural food is hard to find. Below are all the specifications you will need.



END ELEVATION

REAR ELEVATION

Squirrels will go for this in a big way, too!

NNSYLVANIA STATE LIBRARY
OCUMENTS SECTION

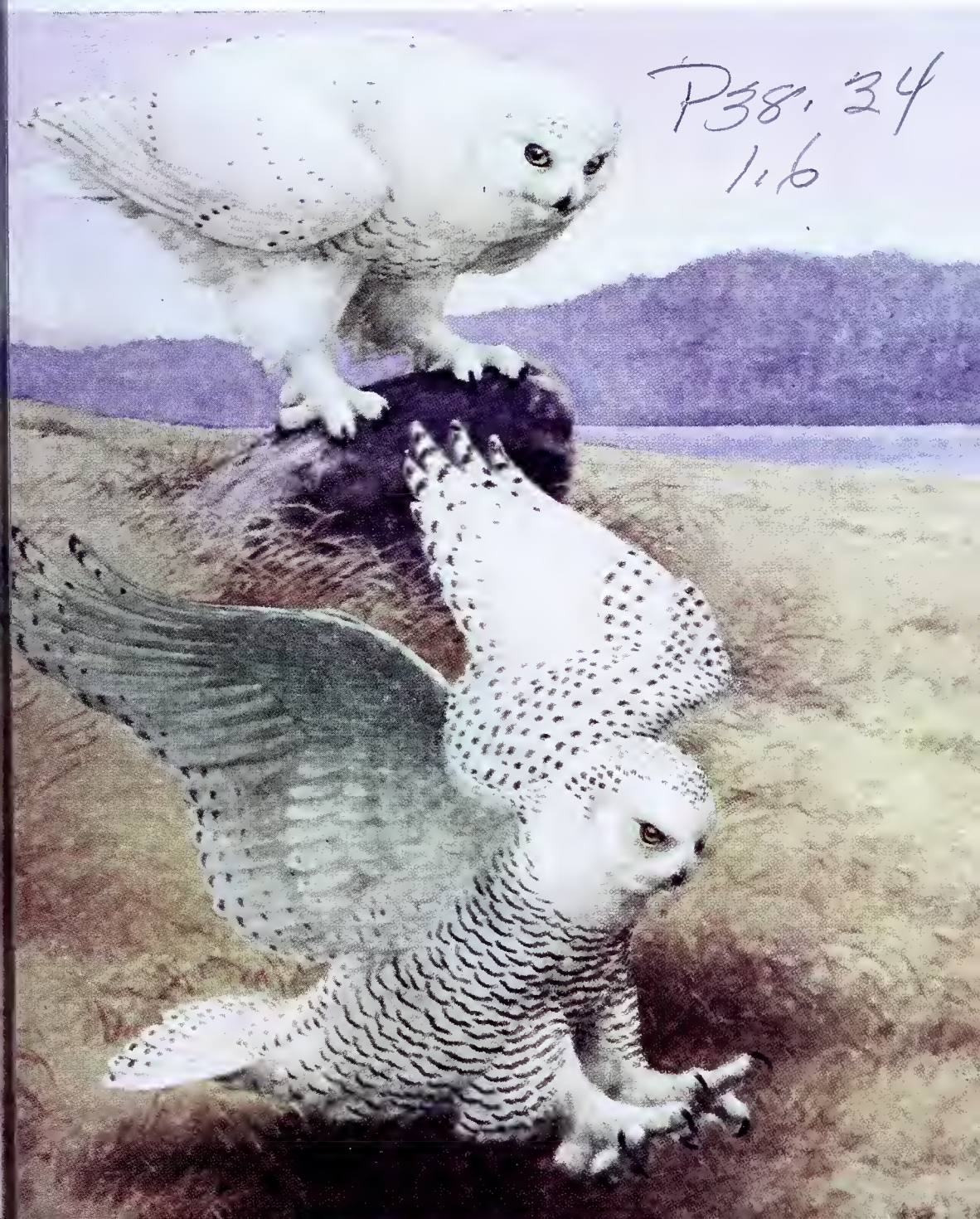
PENNSYLVANIA

Game News

EBRUARY 1954

10 CENTS

P38.34
1.6





THE STORY BEHIND THE COVER

OF all winter visitors to Pennsylvania, certainly none is more spectacular and majestic than the Snowy Owl. From their normal home far north on the Arctic tundra, these large and powerful birds soar south periodically, driven by hunger to explore new lands and warmer climates.

These big, white owls are glaring examples of the fine relationship which exists between wildlife populations and food supplies. For it is only when the Snowy Owl's principal food—a small rodent peculiar to Arctic regions—becomes scarce, that these birds appear in large numbers as far south as Pennsylvania. Their invasions of our Commonwealth normally occur at four year intervals in direct proportion to the years from low to high points in the lemming population cycle of the far North. Although they prey on a few other small rodents found on their home range, it is only when this normal food supply vanishes that they will regularly attack rabbits, snowshoe hares, or other larger wildlife species.

This is a bird accustomed to the broad expanse of the tundra where few trees grow. It is only natural that when it visits our state, it frequents open fields, swamps and farmland. Here the Snowy Owl is usually seen perched on a fencepost, roosting on a haystack, or often sitting on the ground. No other bird can be confused with this owl for, true to its name, it is predominantly white although usually barred with dark grayish brown on the back, wings, and sides of the breast. Although it is not on the protected list in Pennsylvania, there are many who feel the rare winter visitor is much too interesting and beautiful to destroy.

Except for man, the Snowy Owl has few enemies. On their southern sojourns the big, slow-flying birds have to face the red and gray foxes but as a rule, their only worry is another white one, the Arctic fox which steals young and eggs whenever it can. As with all other wild creatures, however, the Snowy Owl's chief concern is food. And as Dr. Earle Poole has so faithfully depicted it, when lemmings become scarce, the beautiful white owl, driven south from the land of almost perpetual ice and snow, turns to some Pennsylvania meadow in search of mice and rats.

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 2

CONTENTS

Grousing About Grouse 4
By Roger M. Latham

Double-Dog of Devils Ridge ... 12
By Keith Schuyler

Whittle A Wooden Duck 18
By E. R. Augustin, Jr.

Black Targets, White Snow 25
By Robert S. Bell

Federal Aid in Wildlife Restoration — Southeastern Pennsylvania 29

Partridge Shooting in Majorca 39
By Ehrman B. Mitchell

★

Cover Painting
By
Earle Poole

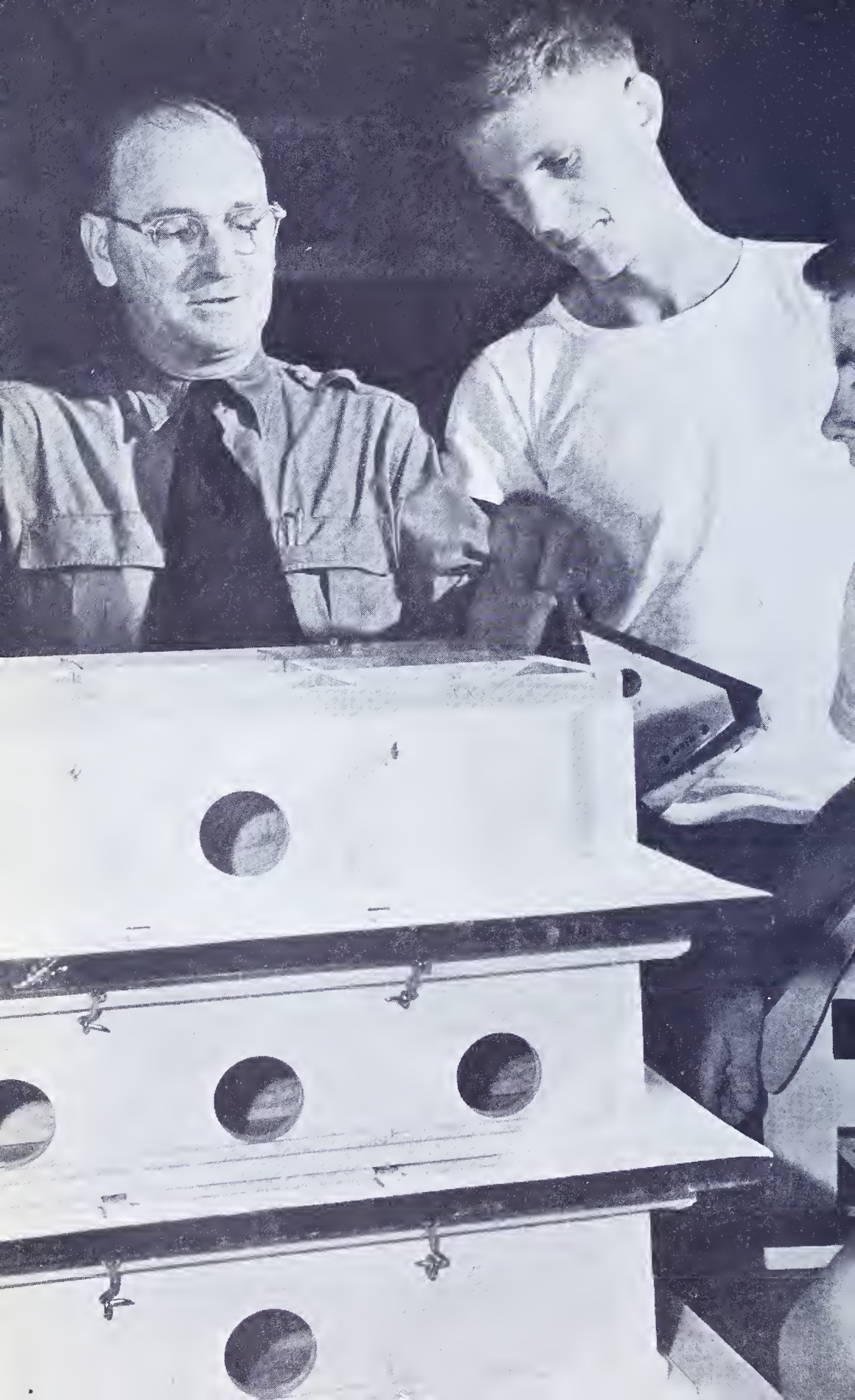
PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Commercial Interest

Those who sneer at outdoor enthusiasts as being "sentimentalists," who scoff at conservationists as being "crack-pot dreamers," and who brand sportsmen as "menaces to modern culture" are rapidly becoming "vanishing Americans." Their complaints have increasingly become hollow echoes in the wilderness of confusion and misguided thinking.

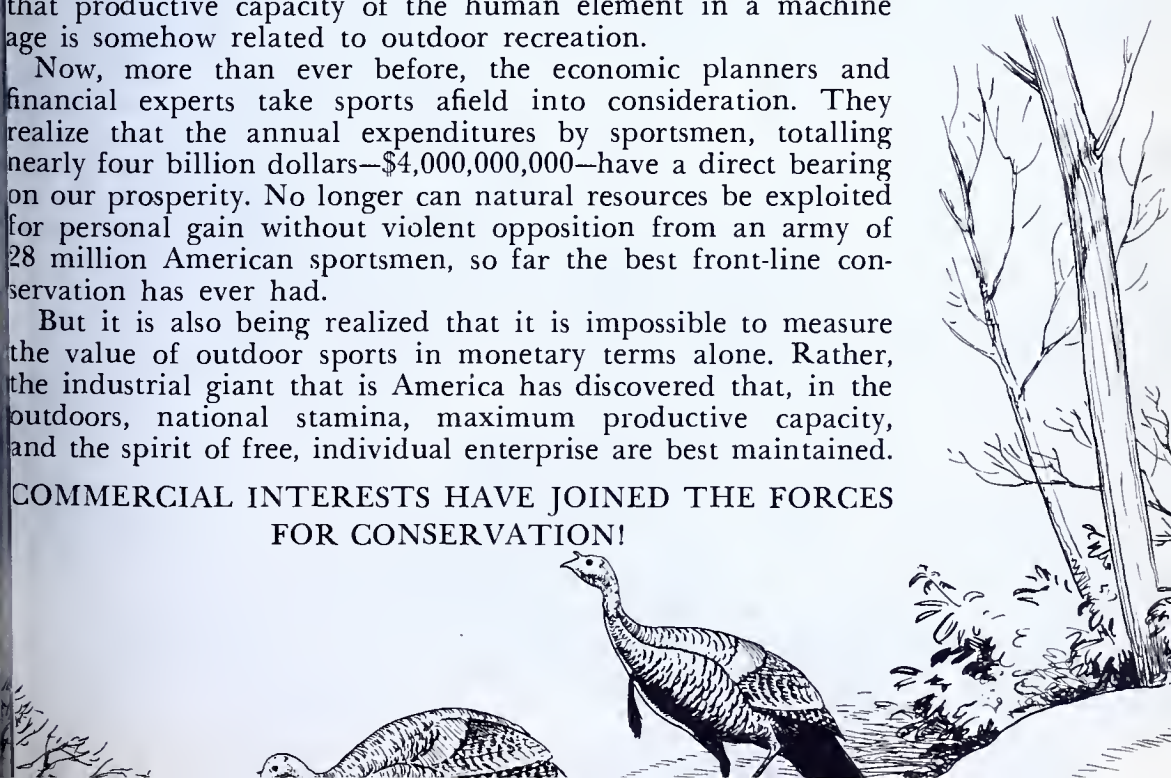
Climaxed within recent years by a tremendous growth of public awareness and economic appreciation, the era in which we live may well be regarded by future generations as the "conservation century." And no finer tribute can be paid those few who pioneered this new way of life than the interest now being shown by commercial concerns. When businessmen and industrialists pause in their pursuit for economic strength to honor conservationists, rightful recognition is being received. When both professional and amateur guardians of natural resources get full credit for making America a better place in which to work and play, public opinion is on the right course. And when the president of a large corporation making mechanical marvels grants this credit and molds this opinion by stating, "My industry has a stake in conservation," the world has finally begun to firmly note and long remember that conservation can't wait.

While this commercial interest in the concepts so long held by sportsmen is not new, never before have so many companies and corporations demonstrated so fully that they realize their capital wealth is compounded on basic commodities like soil, water, forests and wildlife. And they are more and more aware that productive capacity of the human element in a machine age is somehow related to outdoor recreation.

Now, more than ever before, the economic planners and financial experts take sports afield into consideration. They realize that the annual expenditures by sportsmen, totalling nearly four billion dollars—$4,000,000,000—have a direct bearing on our prosperity. No longer can natural resources be exploited for personal gain without violent opposition from an army of 28 million American sportsmen, so far the best front-line conservation has ever had.

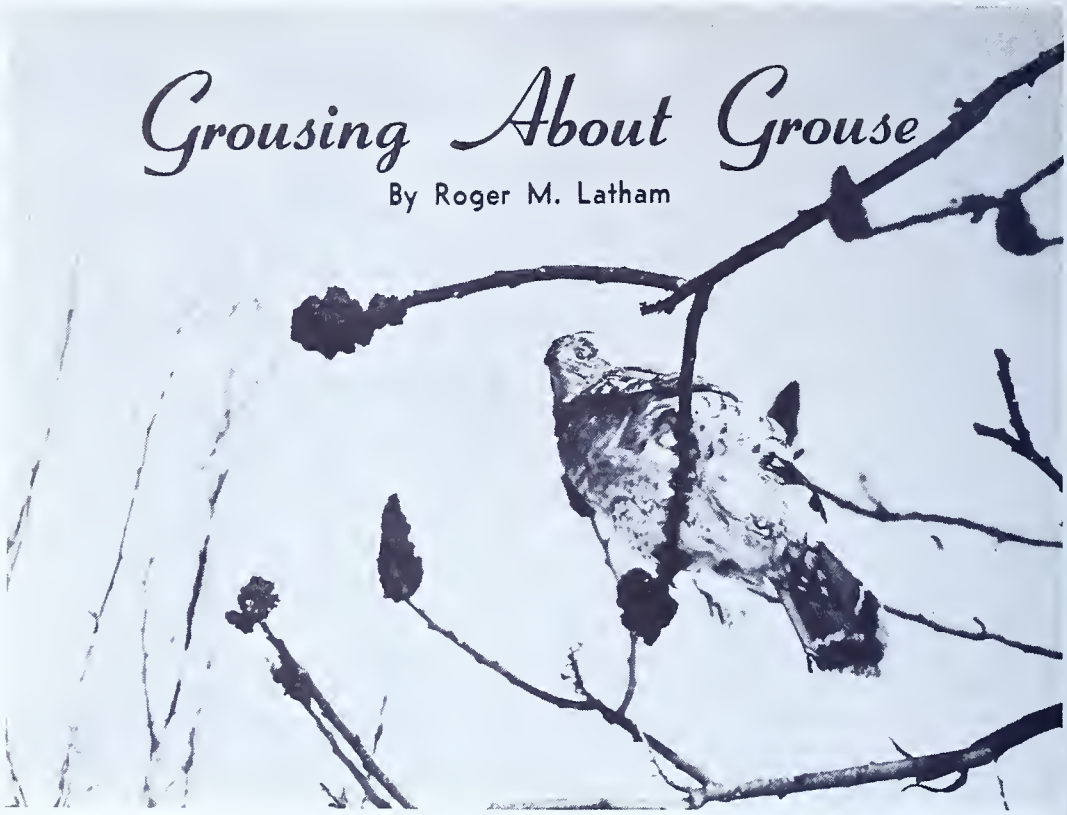
But it is also being realized that it is impossible to measure the value of outdoor sports in monetary terms alone. Rather, the industrial giant that is America has discovered that, in the outdoors, national stamina, maximum productive capacity, and the spirit of free, individual enterprise are best maintained.

COMMERCIAL INTERESTS HAVE JOINED THE FORCES FOR CONSERVATION!



Grousing About Grouse

By Roger M. Latham



THERE are some old grouse hunters in Pennsylvania (and some young ones, too) who occasionally get pretty badly worried about their favorite game bird. Anyone who has ever hunted old thunder wings is determined to guard this noble bird against every endangering influence, and, during any "low" of the grouse cycle, these hunters insist upon curtailed seasons and bag limits. and even closed seasons, to safeguard their sport. No one can doubt the sincerity of these men, but at times they may become over-zealous and over-cautious in their concern and insist upon protective measures which do little real good in saving or restoring this bird. For instance, there is good evidence that the closing or curtailing of seasons and the restriction of bag limits during the years of the cycle when grouse are scarcest have little apparent value in speeding recovery. Facts are going to be presented which indicate that we can continue to shoot grouse right through the lean years and still have just as many birds at the "peak" of the cycle as there would have been if the season had been closed for several years.

But first, just how much have things changed in the last forty to fifty years? Well, in Pennsylvania back in 1899, when the first season and bag-limit restrictions were placed upon the hunting of ruffed grouse, *a hunter was permitted to kill ten grouse every day for two solid months (October 15 to December 15).* In order to kill ten grouse today, the average hunter, even with modern guns and ammunition, would require about eight boxes of shells and a carload of alibis. In the "good old days" when a man had to run under the cloud of smoke from his first shot to get a second opportunity, some outstanding wingshots developed. It was not unusual for a party of four or five men to return after a day's hunt with fifteen or twenty-five or more birds. Even then, a majority of the

day's bag may have been killed by one or two "crack shots" in the group. That was the heyday of grouse hunting, when men spoke of "six straight" or of successive doubles and could prove their shooting ability. But there is little use in dreaming about the grouse hunter's paradise which existed at that time, for we must face present-day realities which are far less pleasant to contemplate in many states.

In contrast, grouse shooting for 1953 in Pennsylvania lasted one month, with a daily bag of two and a season limit of eight. As late as 1951, Pennsylvania had only two weeks of shooting with a season limit of six. Of course this was not a normal season, because the grouse had not yet fully recovered from the low of the cycle, and the restrictions were imposed as an aid to their recovery. But how effective are these protective measures in speeding up the cyclic increase? Do restricted seasons and bag limits accomplish the intended purpose, or are the grouse hunters of the state deprived of many hours of superb sport for nothing?

Before discussing the questions just asked, let's talk a little about these things called cycles. Many hunters refuse to believe that the grouse cycle exists, and the old-timers may back up their beliefs by saying that years ago there were lots of grouse year after year, and every year. But there may be a good explanation for their failure to observe marked differences in numbers in those days of great abundance, Let us suppose, just as a rough "guestimate," that a number equivalent to about twenty-five per cent of the peak population survives through the low years of the cycle. That is, if we have one thousand grouse in a certain tract of forest when the cycle is at its peak, then there would be only two hundred

Pennsylvania's state bird gets its name from the large, dark colored ruff shown clearly in this striking portrait. Noblest game bird of them all, the ruffed grouse is a bird of mystery, cause for controversy because of its cyclic population behavior.



and fifty birds on the same area during the low of the cycle. Fifty years ago, there may have been as many as ten million or more grouse in Pennsylvania. A seventy-five per cent reduction of this number would still leave plenty of birds in the better coverts, and the difference might not be particularly noticeable to the casual observer. Only by careful and accurate census methods can losses of this kind be evaluated.

Today, it is doubtful whether a peak population would exceed three million grouse in Pennsylvania. A seventy-five per cent reduction of this number would be quite readily noticeable to the hunter, particularly since it would be likely to limit sharply his hunting success.

There appears to be no legitimate grounds for doubting the existence of periodic fluctuations in grouse numbers, because cycles have been demonstrated repeatedly for this game bird and many other birds and mammals for the past two hundred years or more.

THANK YOU!

The writer wishes to thank all hunters and Game Protectors who sent wings and tail feathers of grouse to Harrisburg for examination. This cooperation has enabled the Wildlife Research Division to corroborate the observations of research personnel and sportsmen in the field. Last year (1952 season) the ratio of young grouse of the year to old birds was 199:100. This year the ratio was only 117:100. This obvious decrease in young birds indicates that the anticipated downswing of the cycle has probably arrived.

Again thanks for your cooperation and your interest in the management of this grand game bird.

Roger M. Latham, Chief
Wildlife Research Division

The cause or causes of these cycles are not known. Certain influences, such as disease, weather, predation, malnutrition, and others, have been recognized as decimating or controlling factors, but the underlying causes for periodicity remain obscure. Nevertheless, cycles do exist and, until we learn why they exist, we will have to tolerate them. We have little choice but to make the best of an unpleasant situation.

The fact that grouse populations have declined so markedly within the past forty years in Pennsylvania cannot be attributed to the bird's cyclic nature. This decline in numbers appears to have been caused by two major factors—*natural forest succession* and *an overabundant deer herd*, both resulting in the disappearance or reduction of understory growth so essential to the prosperity of the species. At the same time, *hunting pressure* appears to be only of minor importance as a cause of population decline.

The ruffed grouse is fairly exacting in its habitat requirements. Nowhere does it reach a reasonable degree of abundance unless the forest is either in the youthful, brushy stage of development which normally follows fires or cuttings, or in a more mature stage but supplied with a good understory growth of small trees, shrubs, and ground cover. A portion of this brush or understory growth must be composed of food-producing plants.

By direct inference, a forest which has matured to the pole stage or beyond, and from which the understory vegetation has been largely eliminated because of shading or lack of soil moisture, has little value as grouse habitat. The bare floor of the forest offers the grouse almost no protection from predators and does not furnish an adequate year-round supply of food.

Unfortunately, in many states a large percentage of the forests now have matured to the stage where they

no longer constitute high-grade grouse range and many thousands of these acres carry only a trace population. Thus, forest succession has been a major factor causing the decline in ruffed grouse numbers during the past forty years or more.

Many wildlife biologists in all parts of the country have noted that an overabundance of deer has a harmful effect upon forest-dwelling small game. The ruffed grouse, the cottontail rabbit, and the snowshoe hare show marked reductions in regions heavily overbrowsed by deer.

It is not intended to imply that the grouse decline has been entirely a consequence of deer increase, but that it has been hastened and magnified by the destructive effects of an overpopulation of deer upon forest growth. It was pointed out in the preceding section that the presence of a medium-to-heavy understory and ground cover growth was necessary for the prosperity of this bird. This is the principal way in which deer influence ruffed grouse populations—by destroying the small trees, shrubs, and ground plants many years before they would have disappeared as a result of shading and lack of moisture under maturing forest trees.

Even worse, in certain regions in the northern forests, deer have overbrowsed repeatedly burned areas until these are reverting to grasslands nearly worthless as grouse habitat. These extensive park-like areas offer neither security nor food.

In order to manage the ruffed grouse scientifically, it is necessary to know the importance of the annual hunting kill as a decimating factor. What percentage of the fall population is killed by hunters? Is this harvest sufficiently high to warrant the curtailment or closing of the season during the low years of the cycle? Evidently not, because figures for Michigan, New York, Pennsylvania, and other states would indicate that *hunting is seldom a vital factor in limiting the numbers of ruffed grouse,* and that *a normal amount of hunting during these low years has little effect upon the rate or degree of recovery.* Birds harvested when the population is at its lowest level apparently are replaced very rapidly once recovery has begun so that the maximum population is attained by the time the upward phase of the cycle reaches its peak. If this were not true, it is obvious that the periods of scarcity and abundance would not be so regular throughout the range of this bird. Of course, populations existing in isolated areas or on the fringes of the range might be adversely affected by severe reduction during any period of the cycle.



Maslowski & Goodpaster Photo

Less than one percent of the grouse hatched each spring are bagged by hunters during the fall hunting seasons.

In New York, only about four per cent of the total grouse mortality following hatching appears to be attributable to hunting loss, and it is probable that the shorter season and smaller bag limit in Pennsylvania would lower even this small percentage. Studies made in Michigan, Minnesota, and New York indicate that the average kill of grouse on hunted areas is about seventeen per cent of the fall population. But these same studies show that a little more than half of this kill (an average of nine



PGC Photo by Batcheler

A prize any hunter can be proud to bag, the ruffed grouse is an elusive target. Most hunters just can't shoot well enough to "over-shoot" the grouse population during the high years of the cycle.

per cent of the fall count) appears to be deductible, because this amount of the hunting take would have been lost to predators or other causes during the winter anyway. This means that under ordinary circumstances a covert will winter just so many grouse. If the hunting kill does not reduce the fall population below this number, then a part of it, or sometimes all of it, can be subtracted from this winter loss which appears to be inevitable. Actually then, of the total percentage lost from fall to spring, only about eight per cent can be ascribed to hunting.

A clear-cut demonstration that shooting throughout the low of the cycle has little effect upon recovery is given by figures for ten years (1940-49) from the three states of Minnesota, Wisconsin, and Michigan. The table presented below indicates that Michigan, by permitting open seasons and liberal bag limits during the lean years, lost nothing and gained over a half million grouse taken by the hunters. At the same time, about two and one-half million additional hours of hunting were enjoyed by these sportsmen.

Comparative legal kills of ruffed grouse for Minnesota, Wisconsin, and Michigan from 1940 to 1949

	Minnesota	Wisconsin	Michigan
1940	218,000	256,804	289,961
1941	384,000	353,461	349,691
1942	361,500	421,728	381,602
1943	171,178	354,448	290,117
1944	closed	115,389	260,475
1945	"	closed	165,475
1946	"	"	182,642
1947	"	"	228,858
1948	353,840	249,745	354,250
1949	28,750*	22,000*	27,500*

* (per day)

An examination of the table should be proof enough that grouse will rebound just as rapidly without closed seasons as with them. Even though Michigan continued to shoot large numbers of these birds when they were scarcest, a practice which is considered to be sure suicide for the species by many sportsmen, the grouse in that state recovered just as rapidly and just as satisfactorily as in the other two states. What better demonstration do we need that we can have our cake and eat it, too!

What percentage of the grouse are killed in Pennsylvania? The grouse study area located near the Pennsylvania State College and intensively studied by graduate students in wildlife management had a hunting season mortality of only 4 per cent of the known population for the 1949 season, 4 per cent for the 1950 season, 10 per cent for 1951, and 18 per cent for 1952. This tract was hunted harder than the average for the entire Pennsylvania grouse range because its existence as a grouse area is well known. Wildlife technicians in New York estimated that grouse cover of medium quality, comparable to the Pennsylvania State College area, could withstand a thirty per cent harvest without danger to the remaining population.

What about the hundreds of thousands of acres of forested land which are less readily accessible and less pleasant to hunt than the terrain of the tracts studied? There can be no doubt that thousands of grouse in these vast regions die without ever having been shot at by a hunter. It is probable that no more than one to three per cent of the grouse existing prior to the hunting season are killed by hunters in the mountain counties of central and northern Pennsylvania, and the actual figure may be less than one per cent. If this is true, then a closed season during the low of the cycle could have little effect upon the numbers of grouse on this primary range, especially when it is considered that as they become progressively scarcer hunting success will become proportionally poorer. *Even with the most lenient seasons and bag limits, the comparatively small number of grouse hunters could never "over-shoot" the grouse population during the high years of the cycle.* Most hunters just can't shoot that well!

Beside the fact that hunting does not appear to be harmful to grouse, there is much evidence that the annual reduction, although slight, might have a beneficial effect upon the species. First of all, it is known that any animal responds to a reduction by increasing reproduction. Grouse appear to exhibit a pronounced intolerance to overcrowding, and a population of about one bird to four acres seems to be about the limit of tolerance. At this density, the rate of reproduction appears to be inhibited, and little or no increase is noted. However, a reduction of numbers to a point somewhat below this one-bird-to-four-acres level will usually initiate a strong reproductive response in an effort to regain full capacity.

Secondly, there appears to be some correlation between abundance and the onset and severity of the "crash" phase of the cycle. This relationship is still obscure, but it is based upon reasoning somewhat as follows. If the

immediate cause of the downswing of the cycle is a contagious disease, and it appears that this is likely, then the more abundant the grouse become the greater likelihood there is for spread of the disease from one individual to another. Also, when grouse are very abundant, the amount of food available to each individual may be restricted and, if nutrition is not adequate, the birds are likely to be less resistant to infection.

In Great Britain where predators are scarce, gamekeepers spend considerable time each year in "shooting down" the numbers of Scotch grouse left at the end of the hunting season so that outbreaks of disease are less likely and so that the carrying capacity of the moors will not be exceeded.

In Norway, the willow grouse fluctuates periodically as ruffed grouse do in America. Some years ago, the Norwegians, hoping to increase the numbers of these grouse, put on extensive predator control campaigns. After the predators had been greatly reduced, it was noticed that epidemics among the grouse became increasingly worse and hunting success was poorer than ever. It was believed that the predators caught and killed many, if not most, of the diseased birds as they became weakened and flew less readily. Thus, the severity of the epidemic was lessened by the constant removal of diseased birds. Is it not possible that man as a potent predator would also be able to kill the slower-flying and less-alert birds which may have contracted whatever disease causes the decimation among our grouse? Might not this recreational harvest reduce the severity of the cycle to a noticeable degree? Some do not agree, but others believe that increased hunting might be beneficial to the species.

Based upon available information, the following recommendations are made for the ruffed grouse harvest. First, during the four or five "high" years of the cycle, both seasons and bag limits should be very liberal. Second, during the "low" years, caution could be exercised by curtailing the season and bag limits in regions which are primarily agricultural. Where the grouse live in woodlots and larger tracts of woodland more or less isolated from the large forests, they might be harmed by a too-severe reduction of breeding stock during the low of the cycle. No special restrictions are believed necessary for mountainous counties in the primary range.

And finally, the ebb and flow of the grouse cycle should be followed carefully so that a maximum recreational benefit can be enjoyed by the grouse hunters. Once the cycle has begun its upswing, the harvest can be liberalized in relation to the expanding numbers of birds. This year-to-year count can be accomplished by careful censuses of small sample areas scattered throughout the range, by a composite of game protector estimates for each district, and by a constant analysis of age ratios as determined by the examination of wings submitted by hunters. This relationship between the number of old birds and young birds of the year is a convenient yardstick for predicting the stage of the cycle.

All game populations are expendable. When the numbers of a game species remain fairly constant from one year to the next, it means that for every individual born another must die before the next breeding season. Since this mortality must occur anyway, is it not sensible to permit the hunters to harvest a portion of this expendable surplus? Intelligent reasoning dictates that management of the ruffed grouse be planned in reference to its cyclic nature, so that the greatest possible number can be harvested for recreation without endangering the future of the species.

When it is positively known that a "crash" inevitably follows every peak



PGC Photo by Cady

An exceptional photo of a sight rarely seen—a ruffed grouse caught in the act of drumming. The sound, so common when grouse are plentiful in the spring, is made by beating the wings so fast that the air "thunders" beneath them.

population, during which seventy-five per cent or more of the total number will be lost, why not take advantage of this natural phenomenon and utilize a portion of these "doomed" birds? A beautiful fall day and a smiling hunter holding a brace of plump grouse presents a picture far more pleasant to contemplate than a forest dotted with the bones of grouse which died without benefit to anyone. These bones represent hours of keenest enjoyment lost to those who delight in the thunder of a rising grouse.

. . . *The End*

Hunters Report Seeing Sharptail Grouse

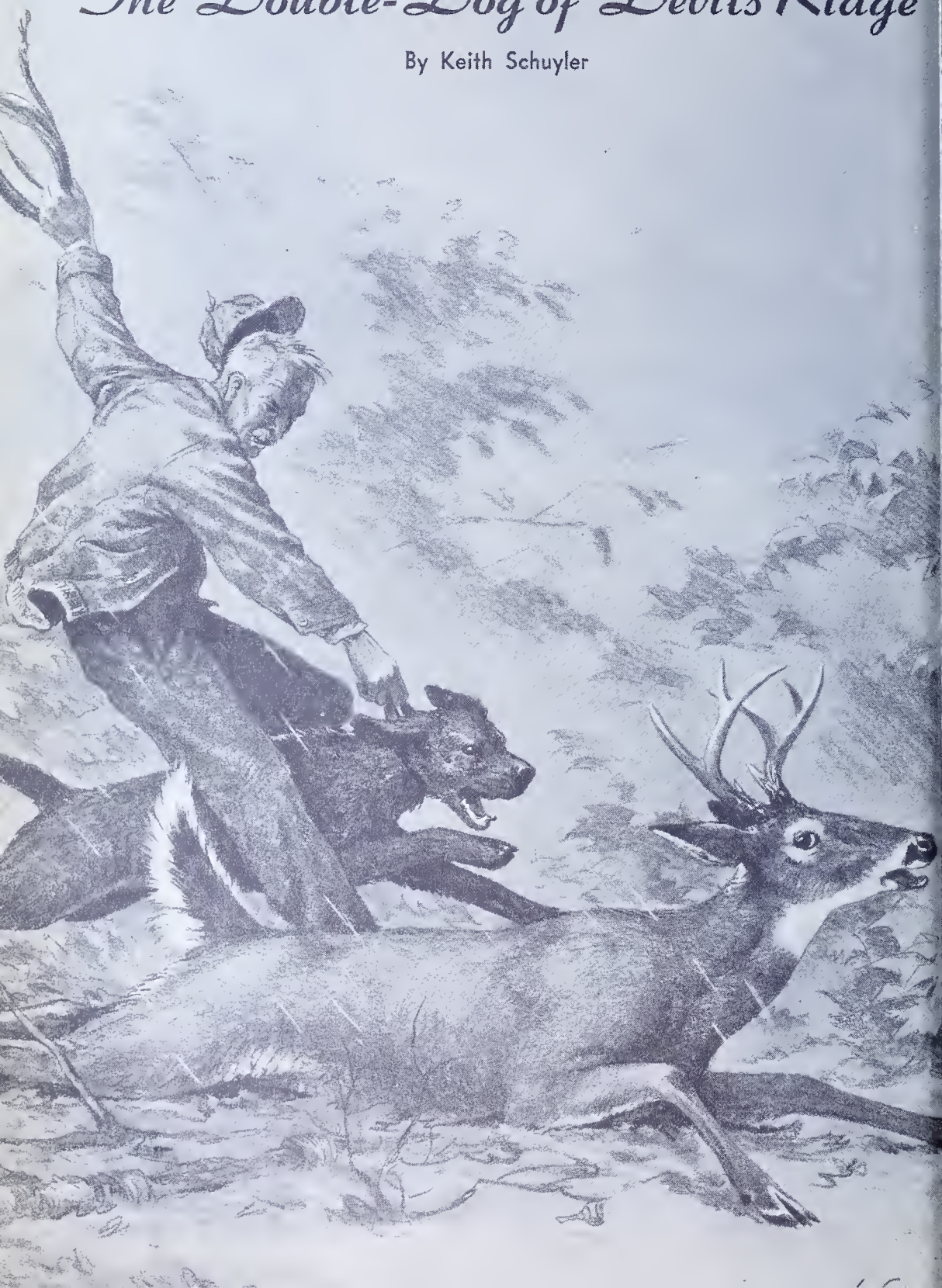
Pennsylvania game authorities and outdoorsmen are watching with interest results from the 49 Canadian sharptail grouse liberated in March of 1953 in Elk and McKean Counties.

Cooperating with the Game Commission, a Smethport bird dog owner reported flushing four of these imported birds while hunting ruffed grouse last November in the McKean County release area. Two December deer hunters reported seeing one sharptail in the same area.

The most encouraging news came from a Ridgway resident who is a neighbor of Stanley E. Forbes, wildlife biologist in charge of the sharptail grouse project. The man reported seeing a flock of 20 to 25 sharptails within one-half mile of the Elk County release site while hunting deer last December 1. This large number would indicate that some young birds were produced in the hatching season of 1953.

The Double-Dog of Devils Ridge

By Keith Schuyler



PART I

THIS is in no way intended to be a vindication of old Rex, the "double-dog." But in the event that you may have heard some of the wild tales surrounding this famous hound, we want to give you the true story.

Then, judge for yourself whether he was a cruel killer, a sneak and traitor to the society into which he was born, or whether he was just a big, overgrown, canine ruffian that wanted the blessings of domesticity as well as the savage freedom of the hills to which he seemed best suited.

Ez Killery named him Rex. Ez was too illiterate, too stupid, to know or care what the name meant. He had just heard it somewhere. But you know it comes from the Latin . . . meaning "king."

Kings have been known to be gentle, kind and gracious; they have also been known to be treacherous, hateful and sadistic. Rex, to those who knew him in his time, appeared to be all of these. It gained him a reputation that spread beyond the borders of the state and for years established a criterion of extremes in dog behavior. A dog became "as nasty," "as smart," "as gentle," "as savage" as the "double-dog of Devil's Ridge."

He was saint and sinner; and a perfectionist as each.

Wizened old Ez Killery taught Rex to hate. He had no emotion toward any of his many dogs until Rex came along. They were just his servants: to be commanded, to be kicked and beaten and trained for those who were willing to pay the sums that kept Ez, his crummy wife and the flock of kids who somehow managed to live in his hill shanty.

The stock Ez produced was not of kennel caliber. His dogs were bred for toughness, strength and their ability to run foxes, mix it with the big cats or to hold a bear at bay. Their only pedigree was the fact that they came from Killery's place, and his reputation had spread for thousands of miles among men who had need of rugged dogs. Most went to happy lives with new masters, but others died or became champions in the pits.

Over the years he had developed a strain much sought after, and Ez had reached the point where he would soon be able to leave his shanty for something better. His dogs were bringing high prices and his breed had become practically a new line. He was emerging from a tough winter that had isolated Devil's Ridge from the rest of the world for months . . . when it happened. Distemper struck!

Ez had been warned, time and again. But, in his isolated spot among the hills, he had never been bothered with diseases that normally keep dog owners on the alert. He had scoffed at those who advised him to engage a veterinarian. When the distemper struck; it hit hard.

Two dozen animals were reduced to six in a few weeks. Ez, who knew only how to train dogs, not to care for them, failed to take proper precautions, and by the time he did get a vet in to treat those what were left, it was too late. Two more died, and Doc Fillmore said those that lived probably would have recovered without his ministrations.

Out of the four, there was only one pregnant bitch. When she whelped, there was only one puppy—Rex.

Ez had somehow managed to take the loss of the other dogs standing up, but when old Brindle dropped the single puppy, he sort of went off the deep end. All the normal nastiness and hate in the wicked old devil became directed at the defenseless little, wobbly-legged and clumsy dog. Even old Brindle couldn't stand the treatment Ez gave her solitary offspring, and one day she overcame her normal fear of Ez to make the mis-

take of growling back at him when he was in one of his worst moods.

The club Ez used on her had a projecting knot that caused a depressed fracture of her skull, and Brindle went blind. From then on, he didn't abuse either Rex or his mother when they were together, but during the training season, he made up for it on the young dog.

Ez never could break the dog's spirit. As single puppies do, Rex grew fast on Brindle's full milk supply. He was black as the ace of spades, deep-chested, heavy-jawed and fast. He loved the long runs after foxes, and twice he caught one of the clever fellows. When eight months old, he managed to keep a bobcat busy until Ez could dispatch it with a club.

He was never weighed, but those who got to know him said that Rex would go at least one hundred pounds. For even one of Ez's dogs, that was heavy; the way he fed them.

When Ez was away with one of the other hounds, his skinny kids would flock around the big dog. It was the only affection he ever knew, and he would wait until Ez was well away from the shanty to whine for the attention of the children. Somewhere in Rex's scrambled lineage was a Chesapeake retriever that endowed him with short, black curls that the children loved to run their grubby little hands through.

Although hating Rex with all the ardor at his command, for the strength and cunning that should have been divided among a valuable litter of five or six dogs, Ez soon began to realize that the object of his hate was the best dog he had ever developed.

Twice Rex ran away only to come back to terrible beatings. Both times he turned upon his master and was knocked senseless for this show of spirit. Ez became just a little afraid of him and began to beat the dog more frequently; hammering at him with a club just out of the range afforded the black dog's teeth by the heavy chain that held him. Old Brindle, again heavy with a new litter, had lost interest in her grown son.

Ez had let word out about his new dog, and several buyers had made inquiries. However, Ez was determined that he would make up on this one dog most of what he had lost when Brindle failed to produce a normal litter. By the time Rex was a year old, the price was a thousand dollars. It narrowed the list of prospective buyers, but interest in the wonder dog became intense. For, the big, black hound was truly a wonder.

Then Ez had one of the few clever ideas of his sordid career. He let it be known that he was going auction Rex to the highest bidder. Already he had offers approaching the figure he was demanding, and he was sure that if he could get a gang of prospective buyers together, he could get his price and maybe a lot more. He promised a demonstration of the dog's ability before the sale.

The word was out and the date set when Rex ran his first deer.

It was a wet morning in late September. Ordinarily Ez would not have been out with any of the dogs, because he knew the foxes and cats would lie in until the rain was over. But, he wanted to keep Rex in top form for the auction date two weeks hence.

Even so Rex might not have bothered the deer if he hadn't come barging right into a herd of six does and a big buck.

So many times he had trembled under Ez's curses when he had thrown his head up curiously as a deer crashed through the brush on previous trips, and he had remembered the tongue lashing each time his sensitive nostrils caught the spoor of a whitetail while seeking other game.

This time was different. He was out of his master's sight, and the buck



foolishly decided to make a stand for a moment. He changed his mind quickly when he saw the size of the animal that had invaded his privacy, and he wheeled wildly after the does. But, he was not quick enough.

True, Rex's leap for the deer's throat fell short, but it was enough to get the taste of blood in his teeth. Had the deer chosen to run by Ez, even then he might have saved himself a lot of trouble, but he went the other direction with a ball of black muscle behind him.

The buck was at the end of his first circle, a harrowing half-hour chase that ended when Rex saw his quarry cross the creek below the spot at which Ez waited curiously for his dog. Rex anticipated the buck's next turn and met him in a small clearing.

Ez heard the deer bawl as he was dragged to the ground, and he came running in to yank Rex away from the struggling animal before it was too late.

Rex attempted a great show of pride in his achievement as Ez snapped on his leash, but his heart was not in it. He sensed the rage that had turned his master's face a dirty white. When they arrived hime, Rex was even more uneasy as Ez chained him to his pen without a word. He didn't like the way Ez walked toward the shed where he kept his club.

When Ez returned, he wasn't carrying the club. Instead, he held a long, leather lash wired securely to the end of a buggy-wheel spoke. Rex had never been whipped before, but he cringed from the thing as Ez shook it out behind him on the path.

Ez wasn't taking any more chances of killing his most valuable asset. But he was determined in his sadistic way to "learn you not to chase deer." In his left hand he carried an old deer tail, and he threw it to the nervous hound.

Rex automatically extended his nose to the strange object. Fire laced

across his side and he bounced away with a surprised yelp. Ez moved in, picked up the deer tail, and again he tossed it toward the dog. Again Rex sniffed cautiously in the direction of the hairy object, and again the leather cut across his ribs.

The third time the act was repeated, Rex merely rolled his eyes toward the tail and then alternated his gaze between Ez and the source of trouble while straining away against his chain. He saw the next lash coming but was powerless to evade it.

For the next ten minutes Ez worked the dog over unmercifully. The children heard Rex whimper and came running through the rain to his aid, but then Ez turned the whip on them.

Fortunately for him, Ez was just out of the dog's reach, for at the first scream from a child, Rex flew against his chain at his master. His interference only succeeded in bringing attention back to himself, until once more he could only whimper.

Ez took him out again the next day so that his wounds wouldn't stiffen him, and Rex ran a red fox right past the stump on which he stood.

Three days later, he ran another deer. The following Tuesday he killed a small doe and came back with tell-tale blood on his muzzle.

Ordinarily mean and moody, Ez was now a raging maniac when he whipped the leather scarred dog. Sunday was the auction, and if Rex even so much as looked at a deer, none of the buyers would give him a second glance.

Then suddenly Ez changed his manner completely. He fed Rex well on Wednesday and applied lard to his open lash cuts. The next day he groomed him and fed him well again. Rex didn't know that Ez was worried about the way he would cower at his approach. A good dog man might sense that there was a reason for this fear and be extremely wary when it came to buying.

By Saturday, Rex was taking the treatment almost as a matter of course, and he even licked Ez's dirty hand as his master scratched about his ears. Life had never been better.

There were eleven cars parked around the old shanty at seven o'clock on Sunday morning. Several big dog men had made the trip to the hills themselves, others had sent their handlers, and a few were just dog merchants who hoped to buy the dog and sell at a profit.

It was a crisp, frosty morning, and Ez approached the pens as the sun was reaching long arms to pull itself over Devil's Ridge. Rex was all eagerness as Ez hooked him to the leash, and he submitted gleefully to the hands that tested his muscles and drifted tenatively over his black curls and along his ribs, withholding a whimper when fingers touched a sore spot.

"He's a beautiful looking animal," one fat man said admiringly.

"Almost too beautiful," muttered another. "He looks like an overgrown retriever with a great Dane's mouth and a Walker's tail."

"What you buyin'?" Ez, who overheard, put in. "The looks, or the dog! Ain't anyone ever complained about a dog I sold him yet. Is there?" he asked one of the men to whom he had sold before.

"No, Killery. I've never heard any complaints. This fellow doesn't look much like the others, though. Yet I hear he has it all over anything you have ever raised before."

"Same stock," Ez grunted. "That's the trouble with you fellows. You breed you'rn all to one pattern, and they all come out about the same. This'n here's got the best of everything that ever went into my breed."

"We'll see," said another, poking at his teeth with his finger nail. "Which way do you want to go?"

Ez had planned long hours which way he would go. The deer were

more apt to be working the cut-over timber down the flats and up the south side of Devil's Ridge. Mostly gray foxes down there anyway. Rex would look better on a redfox, or maybe a cat, if they headed straight north and along the low hill that met the Ridge farther up the valley. Much less chance of seeing deer, too.

Well, those of the men who are still living, won't forget that morning until their name is called. They struck the fresh trail of a gray fox near an old abandoned farm, cut out of the timber, before they came to the hill, and Rex put the fox up a broken-down apple tree in just twenty minutes.

The hoar frost on the hill was still heavy enough to leave a track, but Rex picked up a trail where none was showing. He put a red fox up a half hour later, and within the hour he had brought it to hole and barked in until Ez called him off.

The dog's voice was a rich bellow that broadcast every action of his quarry. Even those who had never before seen the hound could interpret his talk. They wagged their heads and grinned appreciatively.

One of the men bounced another red from his nest at the base of a big hemlock, and Rex brought it around twice in the next two hours. Several of the party had a chance to see the fox.

Since Ez didn't want any foxes killed, as he needed them to train his dogs, a .410 pistol was fired several times by one of the men to test the dog's reaction. Rex just looked at him curiously and didn't flinch.

It was nearly noon when they came upon one solitary wildcat's track in a little patch of shaded frost. No one wanted to spend the remainder of the day on the ridge chasing cats, but Ez said he would show them something. He had called Rex in to leash, and now he released him on the cat tracks. The dog was in a frenzy even before the leash was unsnapped, and he was away at full tongue the second he was free.

Ez let him get off about seventy yards, then he yelled. "Whoa!"

Rex slid to a stop and looked inquiringly back over his shoulder. "Come in, boy," Ez called. Rex looked once, longingly, straight ahead, then he turned and came trotting sadly back to his master.

"He'll fight 'em, too," Ez said proudly. "Look here." He showed them some of the scabbed-over lash marks that had brought questioning looks from the men earlier in the morning.

. . . *To Be Continued*

Foxes Have Returned To Rabies Areas

During the Pennsylvania campaign against rabid foxes, in the late winter and spring of 1952, fears were expressed in some quarters lest foxes and other wildlife be eradicated completely in the areas treated.

In the fall and winter of 1953, bounty claims and reports from trappers show that foxes have returned in considerable numbers to areas where poison bait was used in the rabies program of the Game Commission and the Department of Health. This bears out what wildlifers have learned, that following any such effort the vacuum created is quickly filled from surrounding untreated areas.

Reports on 1953 small game hunting and trapping success indicate that game and fur species were at least as abundant in rabies areas as previous to the control campaign. In some of these localities small wildlife appeared even more numerous.

Whittle A Wooden Duck

By E. R. Augustin, Jr.

Outdoor Photographers League
Photos by the Author



IF you want to enjoy Pennsylvania waterfowl in season and out, flip open the blade of your favorite jacknife, fetch a wood block, and whittle yourself a duck. It's easier than you think, according to Henry Lentfer, nationally-known taxidermist of Livingston, Montana, who mounts game for a living, but carves and paints his miniature models only as a hobby.

The pastime is not only inexpensive but requires few tools. It takes but a few hours of practice to produce striking results. As you become adept at whittling ducks, you can branch out and carve quail, pheasants, even Canada honkers. Before long, the walls of your den will seem to come alive with colorful silhouettes of Pennsylvania wildfowl.

The first step is looking through the pages of magazines for photographs or paintings of birds in flight. The outdoor magazines and sportsmen's calendars are ideal for providing suitable patterns for cutouts. Such illustrations should not exceed six inches from tail tip to bill.

Next, trace the outline of the bird with pencil and carbon paper on a block of 1 1/8-inch soft, knot-free pine. The grain in the wood must run





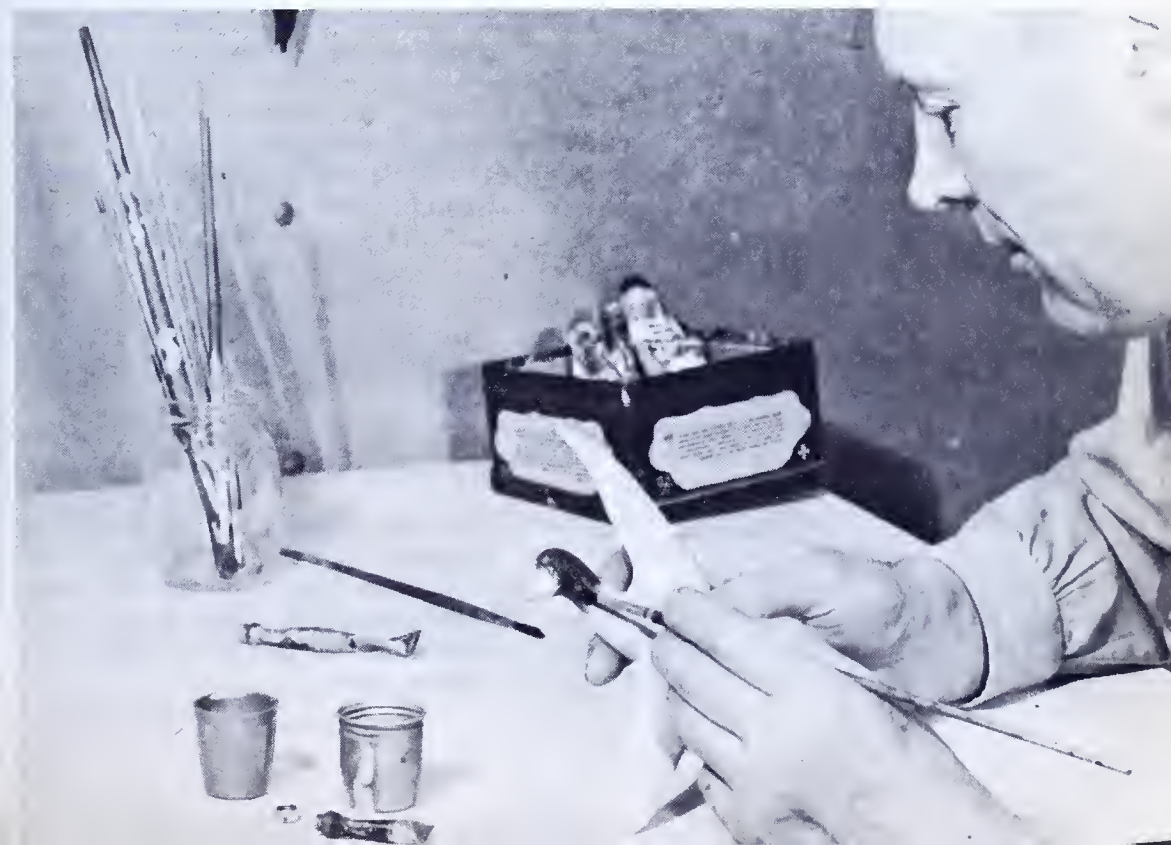


the full length of the bird silhouette. Using a coping saw or jigsaw, cut out the blank carefully.

Actual carving is done with a sharp, 3-inch jackknife blade, and this will require a little practice in planning proportions and shaping contours. Don't become discouraged with your first attempt, if it does not turn out quite like you had expected. Further practice will make perfect.

Lentfer prefers to begin his whittling with the wings, working back to the body and tail, finally carving out the head and neck. Rough out the entire bird, then gradually work down to finer detail by repeatedly rounding off the various sections of the body.

Since whittling is a pleasant, unhurried pastime, don't rush. Take your time, proceeding slowly so that too much wood is not removed accidentally





from any one part. The neck and head require most care, but feather detail is not essential once proper shape is attained.

Coarse sandpaper is employed at first, then finer grades for the smoothing-out touches. Next, insert a small screweye in the body behind the upper wing for suspending the bird while paint is drying, and later to hang it on the wall.

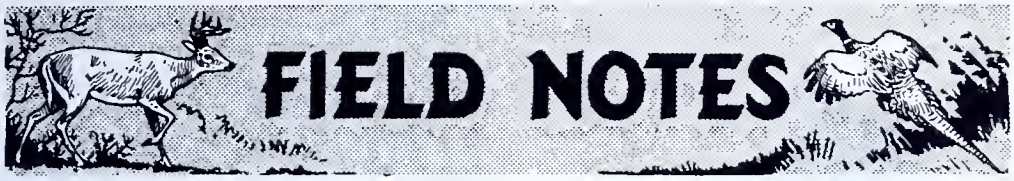
Your art supply store will have oil colors in small tubes, and you will want a chart as an aid in mixing colors to create the right blends. Lids from old jars provide ideal small paint containers for mixing, although an artist's palette or clean glass pane are also useful.

Before painting your whittled subject, study the natural color of the feathers on a mounted bird or Kodachrome photograph or oil painting. Then lay out lightly with pencil those areas on the wooden silhouette which show color changes as a guide before painting. Start with the head, then work backwards to paint the neck, body, tail and wings. Use a small brush for applying the paint, which must be thick enough so that it will not run. Do not paint in feather detail, although fine gray lines may be applied over the dried, white-painted areas to suggest outlines of feathers, if desired. The eyes are painted last, and for a truly realistic effect, tiny glass eyes may be obtained from any taxidermy supply house.

Study the step-by-step process of duck whittling, as shown in the accompanying photos, then cut out a few blanks and have them handy for whittling in spare moments at home or afield.

On his fishing or hunting trips, Lentfer always carries a few blanks in his car, and often a partly whittled bird in his pocket. He has quite a collection now of his own, and once started you, too, will find the whittling hobby difficult to set aside. Lentfer has not only bestowed many of his finest whittled birds upon sportsmen friends as gifts, but he has used his hobby as a Cub Scout project to teach whittling to youngsters.

. . . *The End*



Month of the Mad Moon

HUNTINGDON COUNTY—On November 23, 1953 in Union Township, Huntingdon County, a hunter named William Shaver of Mapleton Depot had an unusual experience. Mr. Shaver was hunting rabbits not far from Mapleton when his dog began to work excitedly in some thick brush and green briers. Wanting to get a better look into what caused the dog's excitement, Mr. Shaver entered into the thicket and suddenly a spike buck deer jumped up and charged directly towards him, pinning him up against the brush and green briers. The deer's horn made a rip in Shaver's hunting coat about seven inches long. When the deer backed up and as soon as Shaver was able to, he put a load of bird shot between the deer's eyes, and settled the question as to who was going to win the fight. Deputy "Abe" Costlow from Mt. Union was called to the scene immediately and he verified that there were plenty of signs to back up Mr. Shaver's story of the manner in which he was forced to kill the spike buck in self defense. Later at the County Home we examined the deer's carcass and found that the deer had been bruised in some kind of a former accident.—District Game Protector Dean M. Lesnett, Huntingdon.



All It Takes

SUSQUEHANNA COUNTY—During the first week of the recent small game season a car drove into the Hank Ellsworth farm near Springville and a man and his sons inquired if it would be all right to go hunting. Assured that it would be, they hunted several hours and shot a few rabbits. Upon returning to their car they thanked Hank and gave him a beautiful stainless steel dipper. Hank was so pleased that he gave the hunter the only ringneck that he had shot. The hunter then got another dipper and gave it to Hank.—District Game Protector James W. Clouser, Montrose.

Danger—Tamed Deer

MONROE COUNTY—The reason for the Commission's ruling that prohibits people from raising deer found in the wild was brought home in my district this month. One of my deer propagating permittees was feeding his deer about 6:00 a. m., when his five-year-old buck attacked him and put him in the hospital in a very serious condition. The buck then escaped and will probably be killed in the deer season.—District Game Protector John H. Doebling, East Stroudsburg.



No Holds Barred

SULLIVAN COUNTY—While talking to a group of hunters on the first day of deer season I was told by one of the fellows of a little incident that he saw happen. One old fellow who had been standing on watch heard a thump on the ground behind him. When he turned, he saw a bobcat and two coons fighting. He thought there was only one coon but when he shot at the animals and went over he found that he had killed the two coons and wounded the cat. The young coons were in an old hole in this tree and the cat evidently tossed them out and came along down with them to settle his dispute.—District Game Protector Patrick W. Craven, Benton.

Curiosity Does Kill Cats

CLINTON COUNTY—On November 12, of this past hunting season, Mr. Paul Combs of York shot a bobcat in the Coudersport Pike area that proved the old adage that curiosity killed the cat. It evidently was a sick cat before being shot by Mr. Combs. After the cat was killed, its face was found to be full of porcupine quills, even on the inside of its mouth. The cat was unusually skinny and in poor condition. Mr. Cat, in his predations, evidently tackled the wrong meal, and would have died of starvation if he hadn't been shot. Maybe the porcupine is of more value than we have given him credit for being, especially in the control of predators.—District Game Protector Charles F. Keiper, Renovo.

Line of Duty

SCHUYLKILL COUNTY—On November 17, 1953, I received a call that two deer were in a pit at the Lehigh Navigation Coal Company Stock Yards in Carbon County, just over the Schuylkill County Line. Because the Carbon County Game Protector could not be reached at the time, I answered the call. Upon arriving at the scene I found that there was one dead buck in a chute where the railroad cars pulled over a cone in which it dumped its coal which in turn was taken from a pit beneath the railroad up on to the stock pile. The other small buck had gone through the trap into the pit beneath and was very much alive and in good shape.

Upon entering the pit, where the light was very dim, I was met by the young buck who had other ideas as to how near he would allow me to come to him. I found myself tossed on my backside and the deer in the other end of the pit. After much rope tossing I finally got a noose around his neck and the men pulled him to the surface. By this time, he was nearly choked and we took him down the track away and waited for him to come to life. He did, and promptly charged into the group and back down into the cone where it was again necessary to rope him and release him further down the track. Score—one deer rescued, one deer dead, one Game Protector badly bruised.—District Game Protector Billy Drasher, Tamaqua.

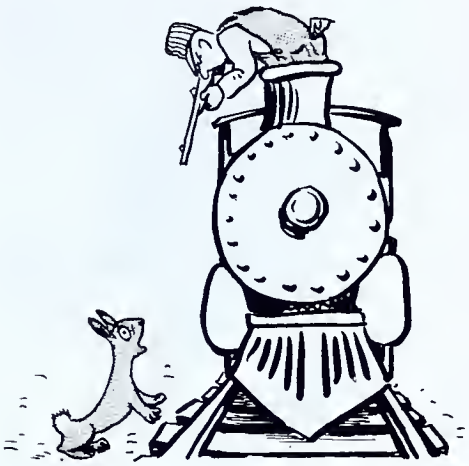
Fox Hound Hunts From Home

DAUPHIN COUNTY—Deputy Turns reported the following incident to me during the month of November. One of his neighbors in Fishing Creek Valley was disturbed throughout the night by the barking of his dog. He could not figure out the reason for the dog creating such a disturbance on the back porch all night long. Upon rising in the morning, the neighbor called a brouther of Deputy Turns and on investigation Mr. Turns found that the dog had cornered a large grey fox behind a refrigerator on the porch. Mr. Turns dispatched the fox, and will be four dollars richer for his neighbor's sleepless night.—District Game Protector Paul H. Glenny, Harrisburg.

Night and Day

ELK COUNTY—While on patrol in the vicinity of Hallton, I checked a hunter who had killed a very unusual black squirrel. The tail of the squirrel was black half the length, and snow white the rest of the length. —District Game Protector Gerald D. Kirkpatrick, Portland Mills.





Trained Hunters Disrupt Time Schedule

LEHIGH COUNTY—I have had violations on shooting from an automobile and from a tractor, but this month I had something new—shooting from a train. Of course, this takes a little cooperation: the engineer stopped the train, the fireman fired at and killed a rabbit; then picked up the rabbit, and the train proceeded on its way.—District Game Protector William A. Moyer, Allentown.

Too Big and Too Little

CHESTER COUNTY — Deputy John Lucas of Spring City, told me that on November 7, 1953 at 2:30 p. m. while on patrol near Ellis Woods, South Coventry Township, he saw one of our beneficial hawks make a dive at a medium sized rabbit, kill it and pick it up in its talons. Flapping his wings furiously to gain altitude, he could only gain a height of three feet. He flew for a distance of about 75 yards and then, apparently getting tired dropped the rabbit and flew away. The little killer happened to be, of all hawks, none other than our sparrow hawk, and one of our most beneficial.—District Game Protector Edward J. Fasching, Downingtown.



Gun Bearer

DELAWARE COUNTY—On the first day of the regular small game season, Deputy Robert Yake stopped four young hunters for a routine inspection. One of them did not possess a hunting license although he was carrying a shotgun. When asked by Deputy Yake where his hunting license was, he replied: "Oh, I'm not hunting, I'm just carrying a spare gun for my buddy."—District Game Protector Daniel S. McPeek, Jr., Glen Mills.

Whistling Swans Worth Whistling About

MONTGOMERY COUNTY—Last November for the first time in over ten years, I had a wonderful experience of watching a flock of eight whistling swans here in my district. Here in Montgomery County, we have a nice park maintained by the county with a small lake in the center of it. I often drive around the lake to see what waterfowl landed on it since my last trip. Ducks are very common on it, sometimes there are rafts of up to 200. Geese very seldom land on it, but I have had the pleasure of seeing them on it a few times when they were forced down by bad weather. But on November 25, 1953, I was patrolling the district when I noticed a raft of large white birds. I stopped and walked down to the shore and watched these birds which were whistling swans, feed and swim around. They were very wild though and soon took off. The birds weighed around 14 to 16 pounds apiece and each had a wing spread of close to six feet. The birds circled the lake a few times, I though that they probably would not land while I was there so I left the lake to give them a chance to land and rest.—District Game Protector William E. Shaver, Mainland.

No Bull—No Hunting

LEBANON COUNTY—A bull weighing approximately 600 pounds died on the farm of Paul Weiler, Myerstown, as the result of a charge of No. 6 shot from the gun of some stupid character. The Lebanon County Federation of Sportsmens Clubs as well as other clubs have offered $100.00 reward for the arrest and conviction of the party who committed this depredation. Also, I have had reports of electric fences and insulators being torn down evidently by persons calling themselves hunters.—District Game Protector Elmer J. Turner, Mt. Gretna.



Black Targets, White Snow

By Robert S. Bell



AT a motion from my hunting companion, Andy Hufnagle, I crouched down under a small pine tree, my heavy varmint rifle across my knees, and tried to keep warm while he slowly raised his head above the top of the ridge and steadied his binoculars, trying to locate the crow we heard calling somewhere ahead of us.

From my position I couldn't see in that direction so I let my eyes wander over the surrounding terrain. A fresh blanket of snow had drifted down during the night and now, in the middle of the morning, everything seemed either black or white in the harshness of the winter day.

The Pennsylvania hills were bare of color now, the brilliant autumn leaves turned brown and lifeless and drifted away leaving stark black branches reaching upward against the gray sky.

Behind and below us the dark waters of the Susquehanna River flowed sluggishly, split by ice-sheathed islands and covered by thin ice floes which ground noisily together then drifted apart. Along its banks scrub willows and tall maples and butternuts were imprisoned in their icy cloaks. The only sign of life anywhere was an occasional crow passing overhead or calling somewhere in the distance.

And it was crows we were after. Deer season was over. It would be months before the warm winds and spring sunshine coaxed the 'chucks from their snug dens to succulant clover fields and sunny meadows. Now, with the woods and fields in the iron grip of winter, the only target for the rifleman was the black-feathered and blacker-hearted crow.

I heard a whisper from Andy and saw him lay down his binoculars and slowly move over against a small pine tree. He wriggled his feet to get a solid position in the snow as he raised his rifle then took several deep breaths to steady himself, the exhalations hanging in the air like frosty clouds.

I moved up to him as he was getting settled and raised my glasses. "He's over there in that dead chestnut," he whispered, "almost at the end of the fence row."

I nodded and located the crow, automatically estimating the range as I did so. It was a little better than two hundred yards, I figured. From a bench rest Andy's outfit would lay most of its bullets in a silver dollar at that distance. From an unsteady position such as he was using it wouldn't be an easy shot.

As I watched through the glasses the crow seemed to explode even as the crack of the gun reached me only a few yards from the muzzle. That bullet gets down there in a hurry!

"You killed him," I grunted, somewhat superfluously, as Andy lowered his rifle and pocketed the fired case for reloading. "Looked that way," he grinned. "If I didn't I'll bet he's got quite a headache anyway!"

We stood up and brushed the snow off our clothing and started across the field to look at the crow. It was better than two hundred long steps. The 50 grain Sierra bullet had centered the chest and literally demolished it.

At present we are both using guns chambered for the wildcat .22-250 cartridge. Andy's is built on a 98 Mauser action with heavy Ackley barrel and 12 power Litschert scope while mine utilizes an '03 action, premium grade Pfeiffer barrel and 12 power Unertl scope with one and a half inch objective. They consistently give better than minute of angle groups when fired from the bench rest.

After using maybe half a dozen different outfits on crows we've come to the conclusion that this .22-250 cartridge offers more advantages and less drawbacks than any of the other calibers.

In central Pennsylvania there are so many hunters that it's usually difficult to get within 150 yards of a crow and this is about the effective limit of the smaller cartridges such as the Hornet and Bee. Also, to be a consistent killer on crows, a rifle and load must group in about a minute of angle. Most of the larger calibers won't do this well and in addition they're noisier than the center fire .22's and more prone to ricochet.

Andy tossed the remains of the crow under a bush and started out through the pines, taking a course roughly parallel to the river. I pulled my jacket tighter around me and followed him. The fluffy snow underfoot made walking noiseless but it kicked up over my low boots and made me wish I'd worn wool underwear.

The next couple of hundred yards produced no targets. There wasn't a sound in the world except the occasional plop of snow falling from a branch. We carefully glassed several fields and fence rows but saw no sign of life except a large gray squirrel silhouetted against the sky as he ran for his den tree. There wasn't even a cottontail track in the snow.

"Guess we might as well head back for the car," I said finally. "We can drive around a little and maybe get some shooting. Give us a chance to get warm, too."

Andy agreed and we turned toward the road which runs along the river. We were walking quickly now, with little attempt at silence, and I jumped a foot in the air when a grouse rocketed out from underfoot and twisted out of sight among the trees.

Andy had automatically thrown his gun up but lowered it, laughing. "Just as well they're not in season," he said "'cause I couldn't have hit him with a shotgun."

As we topped the ridge that overlooked the river Andy stopped and pointed. There, on one of the islands a scant two hundred yards away, half a dozen crows looked for food among the short willow bushes.

"Bet you a cup of coffee you can't take one," Andy whispered.

I wasn't too confident as I dropped to a sitting position with the back of my left hand against a tree. I miss lots of them. But I was on with this one. The 55 grain Sierra bullet kicked out by 36 grains of No. 4895 flattened the crow into a black period on the white ice. Before I could run another load into the chamber the remaining crows were almost across the river, flying low, almost touching the water. They didn't make a sound as they disappeared among the trees on the opposite shore.

"I won't bother taking your picture with that one," Andy said, "unless you want to swim out and get him."

"That won't be necessary," I replied. "I might get another one sometime!"

We slid down the steep bank onto the road and walked toward the jeep station wagon parked half a mile away. Before getting in we checked the guns to make sure they were empty and I glanced through the bore of mine to see if I'd gotten any snow in it coming down the bank. I had a gun blow up in my face once and don't care to repeat the experience.

The sun had come out and was glaring brightly on the new snow, making my eyes water even through the shooting glasses I wore, and I had to blink them several times before I could make out the crows which Andy was pointing out.

"Well, it's your shot," I said as the jeep slid to a stop, "so bust one of them."

He jumped out and flapped down in a sitting position, closing the bolt on one of the deadly little cartridges as he raised the rifle to his shoulder. The crows hesitated a moment, seeming reluctant to fly in the cold weather, and I waited for Andy to shoot.

I waited. And waited. The crows looked around a bit and at each other and then, one after the other, they slowly took off.



I glanced at Andy. His lips were moving but I couldn't make out what he was saying. It probably wasn't fit for my tender ears anyway.

"What's the matter, fella?" I asked. "Did you want to shoot 'em flying?" It isn't often that I get a chance to ride Andy so I had to make the most of it.

"Ah, I breathed on the 'scope and the doggone thing fogged up on me," he growled. He was sitting in five inches of snow but he didn't look cold. Then he grinned. "Oh, well, just as well they flew, I guess. I'd probably have missed and spoiled my average!" Andy always looks on the lighter side of things.

We stopped at a restaurant a few miles outside of Bloomsburg for hot coffee and pie then drove out through Buckhorn to Frosty Valley.

To our right the land rolled away in low, flat bottoms, patched by wood lots and divided by fence rows. An occasional farm house made careful shooting necessary—in fact, during a day's hunt we usually have to pass up more shots than we try due to the safety factor.

"Well, it's about time we see something, isn't it?" Andy asked after several more uneventful miles had passed. As if his words were the magic

formula I spotted a pair of crows sitting motionless in a leafless cherry tree almost three hundred yards away.

The cold air hit me like the flat side of a board as I jumped out and slid a load into the chamber. I squatted by the side of the jeep and found the crows in the scope, trying to blink the water out of my eyes. I tried to put the cross hairs about six inches above the top crow but somehow they didn't want to hold still for me. A not unusual situation! I took several deep breaths and they settled down somewhat and I squeezed the shot off. Even as the trigger broke I knew it was a miss. Not my first one by any means—nor my last, either, I imagine!

I scrambled back in the warm car and squatted over the heater trying to get some feeling back in my stiff fingers. While we sat there another crow flew into the same tree just vacated by the others. "There's one for you, Andy," I said. "Hold six or eight inches high on him."

"Naw, you try him," he replied. "It's your turn to kill one. You oughta have the range now."

"Go ahead," I said. "Get him before he flies. I'm too cold to hold the gun let alone hit one that far."

"Well, no use in both of us freezing stiff," he laughed, "so crawl out and kill him."

Then I realized he was trying to get me to shoot so he wouldn't have to get out in the cold! "You sonofagun, you!" I laughed. "Just for that I'm going to kill him!"

Again I stepped out into the frosty air and dropped into sitting position but this time I ran eight clicks of elevation on the scope instead of trying to hold over and put the cross-hairs on the target. At least I tried to. They waved back and forth in a small arc and I gently applied pressure on the Mashburn trigger when it looked right until it finally let go and the crow side-slipped out of the tree like an amateur going off a high diving board.

Then we heard the hoarse, raucous voice of the downed crow and saw him fluttering in the snow. I had only crippled him and now his calling was bringing other crows to his aid.

I heard Andy slide out the other side of the car and get ready. We didn't have much cover but the crows didn't even notice us as they circled and dived over the crippled bird. In a few moments several of them settled into the tree and I selected the one on my side, knowing Andy would take the one on the right, and touched off another shot. Feathers seemed to explode all over the place and I realized we had both shot at the same time—and both connected.

The rest of the crows disappeared in a silent flash of black feathers but we didn't care even a little bit. We just sat in the snow a minute and looked at the three dead crows under the tree. We don't often kill even one crow at three hundred yards. Three with three shots was almost too much to believe.

. . . *The End*

County Map Series Temporarily Discontinued

In order to present GAME NEWS readers with the important message of how and where monies from the Pittman-Robertson fund are being spent in Pennsylvania, the popular series of Sportsmen's Maps pulished since Septemer, 1950 has been temporarily postponed. Upon completion of this new series of articles, the County Maps will again be featured. Meanwhile, it is believed the new center-spread maps showing locations of Game Lands, Cooperative Farm Game Projects, and other areas of direct interest to hunters will be of tremendous value on a regional basis.

Federal Aid in Wildlife Restoration in Southeastern Pennsylvania



The following article, first in a series of six, the result of combined effort and team-[illegible] and reports, were compiled by Al Bachman, Land Utilization Assistant, and Roy [illegible], Pittman-Robertson Area Leader, of the Southeast Division. The article prepared for publication by [illegible] Supervisor of the Food and Cover Section, and [illegible], Supervisor of the Farm Game Cooperative Section. Photos by Commission photographers.

THE program of Federal Aid in Wildlife Restoration was inaugurated on July 1, 1938. Under this legislation, known as the Pittman-Robertson Act, Wildlife Research and Restoration Projects are approved in various states, and funds provided to finance seventy-five per cent of the costs. (Expenditures for wildlife protection, general departmental administration, propagation and stocking of game are not allowable under terms of the act.) Programs are financed from federal taxes imposed on sale of arms and ammunition. Each state receives a proportionate amount of this fund, dependent upon number of licenses sold and the state acreage compared to the whole of United States.

From 1938 to 1947 receipts from these excise taxes were limited and projects were confined largely to purchase of hunting lands and research problems.

In 1948 the Pennsylvania Cooperative Farm Game Program was expanded and a Pittman-Robertson Project approved to conduct the work. Since 1949 development of State Game Lands has also been partially financed with these monies.

Although aware of the great amount of wildlife development work completed annually by the Pennsylvania Game Commission, many sportsmen have inquired regarding the use of Federal Aid funds in these activities. To acquaint them with the facts, this is the first of six articles to be published in the GAME NEWS, each describing Pittman-Robertson work accomplished in one of the field administrative divisions. The introductory report covers wildlife development in southeastern Penn-



A typical portion of State Game Lands 205 in Lehigh County before the start of the Pittman-Robertson wildlife restoration program.

sylvania, as approved by the United States Fish and Wildlife Service.

The Southeast Division includes Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill and York Counties.

Within this division is contained 80,283 acres (slightly less than nine percent) of the 902,179 total acres of State Game Lands; 300,929 acres (nearly twenty-nine percent) of the 1,048,145 total acres of Cooperative Farm Game Projects; and 27,434 acres (slightly more than nineteen percent) of the 141,812 total acres of other projects throughout the entire State.

Much of Southeastern Pennsylvania is composed of valuable agricultural lands, so it was difficult to purchase State Game Lands at a reasonable price. Consequently the proportionate acreage of State Game Lands in this division is less than average, while the total area of Cooperative Farm Game Projects is relatively large.

As outlined in the attached tables, many phases of development have been executed under the Pittman-Robertson Act since the programs were first approved. Food and cover conditions for wildlife were improved on practically all lands by planting or purchasing small strips of grains and clovers, planting of evergreen trees and berry producing shrubs, planting aquatic plants for waterfowl and managing forest areas by cutting timber that shaded shrubs and low plant growth. Brush pile cover, increased shrub growth and improved fruiting of native plants resulted from cutting large trees along woodland and field borders. Fruit trees were made more productive by removing surrounding tree competition and by periodic pruning. During the past year approval was granted to build and maintain equipment roads to various development areas, all of which is important for expansion of the program.

Of special interest to those sportsmen in the southeast is the treatment of State Game Lands No. 205, Lehigh County. When acquired from the Trexler Estate in 1943 and 1945 this tract, called the Sheep Ranch, was composed of heavily grazed fields and woodlots, containing very few low shrubs or ground cover. Wildlife was scarce. Today it is fast becoming one of the best game lands in the east.

STATE GAME LANDS
ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
JANUARY 1, 1949 TO DECEMBER 31, 1953

SOUTHEAST DIVISION

County	Food Strips: Cleared	Food Strips: Planted to Grains	Food Strips: Seeded to Clovers	Food Strips: Maintained in Sod	Equipment Roads Serviced	Forest Cuttings: Seedlings Evergreen	Forest Cuttings: Seedlings Others	Forest Cuttings: Release	Forest Cuttings: Border-Edge Width	Forest Cuttings: Border-Edge Lgth.	Fruit Trees: Released	Fruit Trees: Pruned	Waterfowl Management: Potholes Constructed		Waterfowl Management: Ditches Constructed Ave.-Ft. Width	Waterfowl Management: Ditches Constructed Ft. Lgth.
	Acres	Acres	Acres	Acres	Miles	No.	No.	Acres	Ft-Ave.	Ft.	No.	No.	No.	Acs.		
Berks	38.8	240.8	110.0	279.0	3.5	14,000	16,132	123.5	68	7,800	13,586	320	1	.3	10	5,200
Bucks	30.5	198.0	99.5	98.8	...	6,800	9,790	36.5	33	5,400	555	14	....	....	17	850
Chester	54.5	52.5	63.0	234.0	...	.....	.....	109.0	83	7,400	35,700	....	....	....	....	.....
Dauphin	110.0	240.5	86.5	659.0	40.0	5,665	38,526	72.0	80	30,000	25,253	27	....	....	....	.....
Delaware	No Lands															
Lancaster	19.5	129.0	44.0	210.0	...	3,050	129,400	130.5	50	3,100	4,015	....	....	....	....	.....
Lebanon	89.0	579.7	575.0	372.0	...	8,000	28,900	28.0	75	10,400	290	246	....	....	....	.....
Lehigh	3.0	1,099.3	435.0	61.5	.5	141,750	320,787	35.0	50	1,200	205	325	....	....	....	.....
Montgomery	No Lands															
Northampton	....	.....	.....	.....	...	.....	.....	96.0	....	.....	12,780	....	....	....	....	.....
Philadelphia	No Lands															
Schuylkill	2.0	98.8	47.5	75.0	.3	.....	6,475	9.5	100	3,000	.....	300	....	....	....	.....
York	27.0	286.5	169.0	178.5	...	1,300	18,041	120.0	82	4,200	6,410	479	....	....	....	.....
Totals	374.3	2,925.1	1,629.5	2,167.8	44.3	180,565	568,051	760.0	*69	72,500	98,794	1711	1	.3	*14	6,050

* Average

Special Notes:—

Several small Seedling Nurseries were planted and maintained on State Game Lands in Berks, Lancaster, Lebanon, Lehigh, and Schuylkill Counties from which were shipped 1,254,800 Multiflora Rose and 47,700 Chinese Chestnut seedlings.

Proper land-use was stressed in planting Farm Crops. This involved contour strip farming, construction of diversion ditches, drainage, sod waterways and other Soil Conservation practices.

Ten thousand (10,000) Multiflora Rose plants on lands in Lebanon County were cultivated to eliminate competition. One hundred (100) Chinese Chestnut trees were fertilized.

In Schuylkill County three hundred (300) Chinese Chestnut trees were fertilized.


LEGEND
STATE GAME LANDS.
AUXILIARY STATE GAME REFUGES.
FARM-GAME PROJECTS.
DOG TRAINING PRESERVE.
GAME PROPAGATION AREA. (GENERAL)
RABBIT PROPAGATION AREA.
STATE FORESTS.
SCHUYLKILL
DAUPHIN
LEBANON
LANCASTER
YORK
HARRISBURG
POTTSVILLE
LEBANON
LANCASTER
YORK
UNION
BUTLER
NEW CASTLE
BLYTHE
RYAN
MAHANOY
UPPER MAHANTANGO
HUBLEY
FOSTER
CASS
BRANCH
REILLY
PORTER
TREMONT
WASHINGTON
WAYNE
MANHEIM
WEST MANHEIM
BRUNSWICK
LYKENS
WICONISCO
WILLIAMS
UPPER PAXTON
WASHINGTON
JACKSON
JEFFERSON
RUSH
SPRING
PINE GROVE
BERRY
BETHEL
UPPER BERN
TULPEHOCKEN
JEFFERSON
PENN
HALIFAX
WAYNE
MIDDLE PAXTON
UNION
EAST HANOVER
WEST HANOVER
LOWER PAXTON
SWATARA
LOWER SWATARA
DEPR
LONDONDERRY
CONEWAGO
ANNVILLE
CORNWALL
LEBANON
CORNWALL BORO
WEST CORNWALL
MARION
JACKSON
HEIDELBERG
LOWER HEIDELBERG
MILL CREEK
ELIZABETH
CLAY
EPHRATA
BRECKNOCK
MOUNT JOY
PENN
RAPHO
WARWICK
W. EARL
EARL
FAIRVIEW
MONAGHAN
CARROLL
NEWBERRY
SUSQUEHANNA
CONOY
W DONEGAL
E. HEMPFIELD
W HEMPFIELD
MANHEIM
LEACOCK
FRANKLIN
WARRINGTON
CONEWAGO
MANCHESTER
LAMPETER
PARADISE
DOVER
HELLAM
MANOR
PEQUEA
STRASBURG
WASHINGTON
PARADISE
JACKSON
HEIDELBERG
N MANCHESTER
YORK
LOWER WINDSOR
CONESTOGA
PROVIDENCE
EDEN
BART
NORTH CODORUS
SPRINGFIELD
CHANCEFORD
MARTIC
E. DRUMORE
COLERAIN
PEIN
WEST MANHEIM
CODORUS
NORTH HOPEWELL
HOPEWELL
LOWER CHANCEFORD
DRUMORE
LITTLE BRITAIN
SHREWSBURY
HOPEWELL
FAWN
PEACH BOTTOM
FULTON
RIVER
49
32
186
210
211
160
110
80
80
23
106
52
145
156
46
34
220
124
43
66
125
184
83
181
78
75
30
136


NORTHAMPTON
LEHIGH
BERKS
LEHIGH
MONTGOMERY
BUCKS
DELAWARE
CHESTER
EASTON
ALLENTOWN
BETHLEHEM
NORRISTOWN
DOYLESTOWN
WEST CHESTER
MEDIA
PHILADELPHIA
CHESTER
DELAWARE RIVER
KEY MAP
PENNSYLVANIA
WILDLIFE · RESTORATION · AREAS
SOUTHEAST DIVISION
PENNSYLVANIA GAME COMMISSION
Scale: 0 4 Miles.
February-1953.
L.A.N.

Cooperative Farm-Game Project Program Accomplishments With Pittman-Robertson Funds
JANUARY 1, 1948 TO DECEMBER 31, 1953

SOUTHEAST DIVISION

County	Leased		Safety Zones Established, Dismantled	Refuses Established, Maintained	Food Strips and Nesting Cover		Contour Strips	Seedlings Planted			Wildlife Borders
	Farms	Acres			Strips	Acres	Acres	Coniferous	Multiflora Rose	Others	Lin. Ft. Cut
Berks	323	31,736	2,131	51	89	42	480	142,180	181,775	37,025	23,770
Bucks	372	24,987	2,628	39	159	57	567	63,840	73,255	25,754	22,140
Chester	257	23,798	2,536	27	129	41	7,091	105,176	359,890	41,495	25,050
Dauphin	141	12,613	960	6	107	42	329	58,450	135,425	30,550	7,165
Lancaster	326	30,457	2,679	39	149	76	1,013	101,698	542,818	77,654	31,777
Lebanon	168	15,959	925	18	86	33	682	66,170	199,000	16,850	16,445
Lehigh	260	26,681	1,853	23	138	78	441	77,090	182,479	25,004	16,010
Montgomery	529	31,065	3,026	51	85	44	132	196,525	119,850	4,264	1,350
Northampton	646	46,441	3,177	31	84	46	955	306,600	179,100	24,220	14,728
Schuylkill	224	19,058	746	2	38	13	669	145,700	208,965	40,303	10,447
York	402	38,143	2,848	28	156	74	1,790	142,708	214,876	23,034	55,800
Totals	3,648	300,929	23,509†	315*	1,220	546	14,149	1,406,137	2,397,433	346,153	224,682

* All Refuges are maintained the entire year. † All Safety Zones are erected prior to the beginning and dismantled after close of the Hunting Season.

Other Leased Areas (Propagation Areas—Rabbit Farms, etc. Accomplishments With Pittman-Robertson Funds
JANUARY 1, 1949 TO DECEMBER 31, 1953

SOUTHEAST DIVISION

County	FOOD STRIPS						Seedlings		Forest Cuttings			Fruit Trees	
	Cleared	Planted to Grains	Seeded to Clovers	Maintained in Sod	Plots Purchased		Evergreen	Others	Release	Border Width	Edge Length	Released	Pruned
	Acs.	Acs.	Acs.	Acs.	No.	Acs.	No.	No.	Acs.	Ft.-Ave	Ft.	No.	No.
Berks	1.5	74.5	19.0	22.5	17	8.5	7,000	20,000	2.0	.....	.....	40	40
Bucks	..	13.5	3.5	9.0	30	8.3	11,000	11,350	1.0	25	3050	.....	15
Chester	9.8	28.0	19.0	20.0	2	1.0	.....	.....	.....	18	800	50	.....
Dauphin	7.0	19.0	11.0	21.0	37	9.3	21,000	6,500	.....	.....	.....	60	90
Delaware		None											
Lancaster	..	..	..	..	6	2.5	.....	.....	.....	.....	.....	.....	.....
Lebanon		None											
Lehigh		None											
Montgomery	16.0	91.0	16.8	106.0	16	6.3	27,200	10,500	.....	20	1700	.....	48
Northampton	..	14.5	6.0	8.0	..	..	.1,500	4,000	.....	.....	.....	.....	.....
Philadelphia		None											
Schuylkill	..	3.3	1.5	6.0	12	3.0	.....	2,000	.....	.....	.....	.....	.....
York	7.0	35.0	4.5	35.5	39	11.0	6,500	2,000	2.5	25	1000	545	45
Totals	41.3	278.8	81.3	228.0	159	49.9	74,200	56,350	5.5	av. 22	6550	695	238



Restoration of wildlife areas includes gully plantings and application of other soil conservation practices.

Following a policy of proper land use, field crops have been planted in narrow strips on the contour, wide hedgerows were established between grain and clover strips, and thousands of evergreen trees and shrubs were planted to retire steep hillsides and provide travel cover between cut-over woodlots and treated woodland borders. Multiflora rose hedges were established adjacent to many food strips.

Wildlife populations on State Game Lands No. 205 are increasing even with the heavier hunting pressure now common throughout that area. True conservation has been put to work on this tract and the results are quite apparent.

Incidentally, 15.9 acres of this particular game land were deeded to the Commission in December 1946 by the Lehigh County Fish and Game Protection Association as a memorial to members of the association who lost their lives in World War II.

Residents of Lebanon County have seen the lands near Colebrook, formerly owned by Military Affairs and conveyed to the Commission in 1938 and 1941, converted to a wildlife development area. Hundreds of acres of old fields are now being planted to grains and clovers, primarily through share-crop agreements with local farmers. Rough steep areas have been planted to evergreen trees and low shrub cover. Woodland borders have been improved and thousands of native shrubs released from competitive growth. Through the introduction of wildlife management practices these lands have changed until now hundreds of hunters enjoy successful days afield on the tract. Of particular satisfaction is the increase in numbers of ringnecked pheasants and rabbits. Deer are residents of the wooded section and several heavily antlered



Above: Evergreens are planted along contours on slopes of State Game Lands 205, Lehigh County. Below: Applied contour farming, border edge plantings, and selective cuttings in farm woodlots all combine to provide improved wildlife habitat.



bucks are killed on the ridges each year. Results of work conducted with the aid of federal funds are obvious on this marginal farm land and wooded area.

The largest Game Land holdings in this portion of the State are located in the mountains of northern Dauphin and Lebanon Counties, close to Harrisburg. These lands, formerly owned by the Grandview Coal Company and H. Albert Smith, were purchased in 1944 and 1945. They provide some of the finest deer hunting in the State. Access roads are maintained and many acres of food strips, cleared since the project started, are planted to small grains and clovers. Wild turkey, ruffed grouse, cottontail rabbit and deer utilize these openings and the foods provided. It is quite gratifying to have this type of hunting within a short distance of the State Capitol and nearby industrial centers.

One of the most recent acquisitions has been a tract in northern Lancaster County known as the Lloyd Wolf farm. Federal Aid for Wildlife Restoration on this area helped finance the planting of multiflora rose to provide hedgerows and clumps of food and cover. Rolling slopes are planted to various grains and clovers with alternating strips of shrubs. The ringnecked pheasant population has increased, and many sportsmen enjoy the area both for dog training and hunting purposes.

In practically every county throughout Southeastern Pennsylvania, State Game Lands have been treated in a similar manner and with equally satisfying results.

Other areas leased by the Pennsylvania Game Commission and managed through use of Pittman-Robertson funds include Propagation Areas, Rabbit Farms, Auxiliary Refuges and dog training preserves. Propagation areas, developed primarily to produce small game for restocking, are established on suitable lands throughout the division. Rabbit farms are similar areas located on an experimental basis within specific counties. Recent intensive development, including planting of seedlings, constructing of brush piles, releasing of berry producing shrubs, planting of grains and clover strips and annual pruning of wild apple trees, created improved conditions for rabbits on both the propagation areas and rabbit farms. Although trapping of surplus game is not financed by federal funds, representatives of the Commission have removed thousands of rabbits and lesser numbers of ringnecked pheasants from these areas in Southeastern Pennsylvania.

Similar management practices were conducted on auxiliary refuges and dog training preserves with the aid of Pittman-Robertson funds, thus greatly improving wildlife habitat.

Development of the Cooperative Farm Game Program has created statewide interest. Due to the heavy hunting pressure adjacent to industrial centers, the need for well managed open hunting areas is apparent. Farmers who lease their lands to the Commission appreciate the added protection of safety zone areas around their homes, and those that hunt recognize that the projects have been responsible for increased game populations.

Cooperative Farm Game Projects are located in eleven of the thirteen counties of the Southeast Division. Due to the great population of people living in Delaware and Philadelphia Counties, projects could not be established within their borders. Practically all projects, however, are located reasonable distances from this great center of population. In fact, more than one-third of the project acreage in this division is within fifty miles of Philadelphia.

The Southeast Division contains some of the largest projects in the State. Two projects of over twenty thousand acres are located in North-



Food strips planted near woodlots provide excellent food and cover conditions for wildlife.

ampton County, while Berks, Bucks, Dauphin, Lebanon, Lancaster and York Counties each contain projects of approximately fifteen thousand acres.

Many of the conservation practices accomplished through use of Pittman-Robertson funds are of a permanent nature. Planting farm crops on contour strips, establishing multiflora rose hedges, planting evergreen and food bearing seedlings, constructing farm ponds, draining wet fields to provide nesting sites, purchasing and planting of food and nesting strips and cutting and planting of woodlot wildlife borders have all materially aided in the wildlife conservation program.

While more than thirty-six hundred farms were added to the Cooperative Farm Game Program during the six years of operation with Pittman-Robertson funds in this one division, the statewide program now consists of 10,383 farms containing 1,048,145 acres.

Technical assistance and advice were rendered to cooperators in establishing the numerous conservation practices on the land. A total of 112 farm ponds were constructed during this period. In an effort to encourage the use of cover crops, cooperators were given 245,520 pounds of rye grass seed for planting in the last cultivation of corn. A total of 12,134 pints of crow repellent were distributed to cooperators in an effort to reduce corn seed damage by birds and rodents.

This Cooperative Farm Game Program has proven so popular with landowners of the counties within the southeastern division that there is a great backlog of requests for participation. Game Commission policy does not permit further major expansion at this time. Most of the available funds are being used to develop sound wildlife conservation practices on farms now in the program.

This is the first of a series of articles on each of the Commission's Field Divisions. These special reports to Pennsylvania sportsmen and conservationists tell how Pittman-Robertson money has been and is being spent in an effort to maintain and improve wildlife conditions. It is hoped that these articles will encourage you, as a sportsman, to personally visit and inspect this important management work.

. . . *The End*

Partridge Shooting in Majorca

By Ehrman B. Mitchell

IN the winter of 1953, I had the good fortune to be in Majorca, that beautiful Island in the Mediterranean which belongs to Spain and where the almond blossoms come out about February first.

When we arrived, I inquired immediately about the possibilities of shooting some game, and was referred to a Majorian gentleman who described to me with the aid of illustrations which he drew, just how they hunt partridges. The novelty of this intrigued me.

It seems that they have blinds erected in the woods or even in the fields, blinds made of local brush and branches of trees. Some 25 yards away from it there is a decoy hanging in a tree. This is a male partridge in a cage which calls any partridge which might have been flushed by the other hunters who are on foot with dogs. As he pointed out, after a covy has been flushed, the birds naturally look for a place to reassemble, and moreover they like to alight on something a bit higher than the surrounding territory so as to be able to look around for their companions. Consequently a small pile of rocks is conveniently arranged near the decoy for a landing place. This was indeed something new and I was most anxious to go along.

"The season is nearly over," he said, "and there are only a few partridges, which have been shot at so much that they are very wary."

Finally some days later, just before



The author, left, and two of his hunting companions in Majorca. The caged bird is the decoy partridge which is hung near the blind.

the end of the season, he said: "I am having the boys from the Iberia Airline office out to my hunting lodge. Will you come along?"

Of course I would! And Sunday morning at 9:30, I arrived at the hunting lodge, a stucco Spanish style farm house. There were 8 Majorians and one American (myself). Fortunately for me two of the men could speak some English, for I could not speak Spanish.

At first the atmosphere seemed a bit strained. They didn't know how to take this foreigner. Soon we started shooting mark, consisting of a large cactus leaf thrown into the air. I was handed a gun and asked to shoot. Luckily I smashed the first one. They patted me on the back like a hero. From then on they were my friends.

Two men were dispatched to a blind. The remaining 6 of us were told to work up over the hill in the general direction of the blind, while out host went for another gun. We had only three guns, of which I was privileged to carry one.

After some haphazard milling around during which a rabbit got up without a shot being fired, I realized that most of these men were not experienced hunters, and so I organized a line of skirmishers with the men holding guns evenly distributed between those unarmed.

We worked over a few fields when I began to get qualms as I thought, "How would I feel if a foreigner came to Pennsylvania and told us how to hunt?" So I decided to call those nearest to me together for a council of war and at least ask their opinion as to what direction to go. Just as we got our heads together, up jumped another rabbit. Catching us off guard and in the way of one another that one also got away without a shot. Soon our host appeared and set me at ease. He told me that I had done the right thing in organizing a line of hunters.

In a woods on top of a hill we came upon the blind which was just as it had been described to me, but we had not flushed any partridges.

A few days later our host told me he had spent an afternoon in his blind. "I was so annoyed," he said. "Five partridges came walking right into the blind. A mosquito was biting me but I dare not move for fear of flushing the birds. I just sat still and let him bite. Finally one partridge looked up at me and realized I was something strange that didn't belong there and he gave the signal —what do you call it—danger?"

"Yes, or the alarm," I replied.

"Well, it gave the alarm," he continued, "and the partridges all walked out of the blind. They spent the entire afternoon walking around but I couldn't shoot because we have our rules, you see, that we must not shoot while they are walking around. They must settle down, preferably on the perch."

This idea is so entirely different from the American point of view, but it bears out the old saying, "different countries, different customs." For use in the blind they have a shorter barrel which is put on the shot gun, about 4 inches shorter than the regular gun which was given to me. It was of Spanish make very similar to an English or American make. My host had a beautifully etched gun made in Spain costing about $500.

The next time it was with four seasoned hunters that we went near the foothills of the mountains to a solitary strange country where the silence was broken only by an occasional bleeting of goats or the gentle tinkling of bells on a flock of white-faced sheep. Outcroppings of rock and many loose stones on the ground were interspersed with grass, lilies and numerous small bushes, some with a pungent odor like eucalyptus trees. There were wild olive trees and an occasional cluster of pines.

Walking along at a fast pace, be-



The blind, fashioned from brush and tree branches, is used in this old world style of hunting.

fore I knew it I was separated from the rest by a small ravine which in no time became a hundred feet deep with precipitous sides covered with rocks and terraces. At my friend's bidding I waited while the others worked around the opposite side. While waiting I took account of the situation. I was on the corner where the gorge ran into another, becoming deeper and deeper. The other hunters had to turn right and work around another short but deep ravine.

Eventually I saw the men coming along on the opposite side of the ravine. Quite a distance in front of them a partridge took to wing and soared across the ravine to my left—a long glide dipping and rising again and giving me time for a careful aim. I pulled the trigger and down it fell.

Climbing down over stone terraces and some precipitous rocks my Alpine training came in good stead. I had little trouble finding the bird since I had marked it in my mind by a wild olive tree. It was a male partridge with bright colored spots of red, green, blue and white near the tops of its wings. Larger than our Bob White, it somewhat resembles the Hungarian Quail which have been introduced into Pennsylvania.

It was a long arduous climb to the top. Soon after I reached the top my friend came along and we walked back to the hunting lodge about 2:30. On the way he shot a partridge off his dog.

We ate a picnic lunch sitting on the ground in the warm sun.

"Could you picnic in the open air like this on January 30th in the United States"? I was asked, and replied that we could in Florida or California but hardly in Pennsylvania. In Majorca it has never been known to freeze.

In the afternoon while the others went into the blinds I was given the dogs, which came willingly with me while I walked over several stone walled fields. The walls were 5 to 6 feet high, well built without mortar. A male partridge got up and I

shot. The feathers flew but he didn't drop. Instead he sailed out over another ravine which I discovered was about 200 feet deep and so precipitous that I didn't follow.

It gave me a glimpse of the bird from the rear. What a beautiful sight the male is in flight. Soaring and then a quick movement of the wings to rise and then another soar into the distance, the brilliant colors on the wings showing intermittently as he soars. The Spanish partridge differs from the Italian and the African I was told.

These partridges seemed to be very wary; I suppose because they had been shot at so much. They got up far ahead of me and only once did a dog have a chance to point and then the bird got up far ahead of him. I began to see some reason for the blind. One shot I missed because the safety was on.

The men in the blinds however had poor luck. They said one of them went out of the blind to change the location of the decoy, thinking to improve it, and scared away five birds that were coming in just then.

In spite of the small bag of game it was an experience I would not have missed for a great deal, and I saw a fascinating part of the island that few visitors ever are privileged to see. Moreover, I have made a few good Mallorean friends. Every time I meet the gentleman who owned the place in the mountains we talk French, and he greets me like a long lost friend.

NOTICE ON BOUNTY RATES

PENNSYLVANIA GAME COMMISSION
(Excerpt from Official Minutes, Pennsylvania Game Commission Meeting, January 7, 1954)

RESOLUTION

WHEREAS, After giving due consideration to the present predator population:

THEREFORE, BE IT RESOLVED, That the Pennsylvania Game Commission, acting under the power and authority vested in it by the provisions of Article XI, Section 1101, of the Game Law, by resolution adopted this 7th day of January, 1954, hereby directs that for the period beginning June 1, 1954 and until further notice, the bounty payments authorized for the birds and animals enumerated below, if killed in a wild state in any county of the Commonwealth during the period specified and presented in the manner and under the conditions stipulated in the Act aforesaid, shall be as follows:

1. *Gray Fox*—$4.00 for each gray fox.
2. *Red Fox*—$4.00 for each red fox.
3. *Great-horned Owl*—$5.00 for each great-horned owl, adult or fledgling, killed during all months excepting November and December.

BE IT FURTHER RESOLVED, That the foregoing resolution shall be duly published in accordance with Section 1102 of Article XI of the Act aforesaid in the February and March issues of the PENNSYLVANIA GAME NEWS, also to be brought to the attention of the public by news release and other sources of public information; and

BE IT FURTHER RESOLVED, That the Executive Director is hereby authorized and directed to certify the foregoing as an act of the Pennsylvania Game Commission.

"I hereby certify the above to be a full, true and correct copy of the resolution establishing bounties on certain predators killed in a wild state within the Commonwealth from June 1, 1954 until further notice. Notice of this action is published in accordance with the requirements of the law."

Logan J. Bennett,
Executive Director
Pennsylvania Game Commission



Tips for Beaver Trappers

If you plan a trap-line for the valuable "broad-tail" during the 1954 open season, 7:00 a.m. February 15 to 12:00 o'clock noon March 6, know and abide by these important rules and regulations designed to conserve and perpetuate Pennsylvania's most valuable furbearer.

Daily and season bag limit is four (4) beavers, to be taken by traps only.

No trapping is permitted at Commission-posted dams.

Non-residents may NOT trap beavers.

One person may set, tend or operate ten (10) traps only. Such traps must not be set on the structure of any beaver dam or house, or within 25 feet of the waterline on the structure of either. Traps must be kept above waterline or ice to facilitate identification without disturbing the traps. All traps must be tagged with metal name tags.

Pelts must be tagged within 10 days after the season closes, and may not be sold or otherwise disposed of until properly tagged. Take them to the Game Protector in the District or County where they were trapped.



PGC Photo by Parlaman

Mrs. Fred White, wife of a taxidermist at Oil City, Venango County, is shown displaying two prize racks from deer bagged during the 1953 buck season. Bearing out a prediction made by Commission officials prior to the hunting season, racks in this studio, as well as others, prove that the best formed, largest antlers came from deer harvested in agricultural areas.

Extensive Winter Feeding Program Planned for Wild Turkeys

Game authorities are optimistic the state's wild turkey kill in the 1953 season will be the highest since these magnificent birds were brought back to abundance in Pennsylvania.

But natural foods for turkeys are in short supply over the northern tier counties, home of a large percentage of the birds. This has caused qualified observers to say wild turkeys will be pressed for sustenance in the next few months, even if this winter turns out to be another "open" one. Under any circumstances the increase in the wild turkey population suggests the need for more winter help than formerly. In case of protracted severe weather, a food shortage could cause a drastic set-back in the turkey program, wildlifers believe.

The safeguard is supplemental feeding, principally ear corn. The Game Commission has been carrying on extensive wild turkey feeding in winter, and responsible sources attribute the establishment and comeback of the bird partially to this program. Recently, in view of the shortage of nuts and other wild-growing foods the Commission doubled its winter feeding budget for turkeys in the northern counties of the state to ensure the safety of the flock. Hundreds of large-capacity feeders have been established and are being filled this winter by Game Commission personnel, as in years past.

Interest in the wild turkey has increased tremendously among outdoorsmen. Many sportsmen's organizations now contract for ear corn and cooperate with their local game protector in providing a supply of food in advance of heavy winter snows. Later, it may be most difficult to get back into the mountains. Regardless, many hardy hunters make week-end or holiday treks into "back stretches" during winter months to feed and note the condition of flocks. They usually report observations to their game protector, so that whole areas are covered and new-found birds will receive aid.

Wildlife authorities make these suggestions to sportsmen participating in this worthy program: 1. Before severe weather arrives, place a good supply of corn in areas turkeys are known to inhabit. 2. Construct crude feeders out of reach of deer. 3. Locate feeders along spring runs, in valleys where the birds will stay in rough weather. Best place is among or near hemlocks or other evergreens. 4. The places where wild turkeys need assistance most are located deep in mountain terrain, usually. 5. Continue feeding until April. Help for the birds in the late winter months is most important. By then, most of the supply of wild foods has been consumed. Also, unless wild turkeys go into the nesting season in good physical condition the crop of birds for that year may suffer.

Commission Sets Tentative Openings For 1954 Seasons

At its regular January meeting the Pennsylvania Game Commission set tentative opening dates for the 1954 hunting seasons, as follows:

Small game—October 30

Bow and arrow deer season—October 11

Antlered deer—November 29

Bear—December 1

The season opening dates will not be official until the July meeting of the Commission when seasons and bag limits will be officially established. A closed season on snowshoe hares may be declared because of a reported decline in the state's population of this animal. A close study of brood stock and other conditions will be made before a final decision is reached.



Photo Courtesy Punxsutawney Spirit

A royal send-off was given to Elizabeth and Philip, a pair of Punxsutawney groundhogs, before they left via air express last June for the Los Angeles Zoo. Members of the Punxsutawney Groundhog Club, who keep close tabs on the February "weather prophets," secured the necessary clearance and captured the pair when they learned the California zoo had no woodchucks. Shown above, left to right: Otto Phillips, chief huntsman of the Club; J. E. McCreight; Sam Light, club president; H. F. Hoffman, district game protector; Robert Philliber and Ray Bowers, club directors; and Gordon Clark, president of the Chamber of Commerce.

Predator Control Head Teaches Trapping

Over-abundance of predatory animals and birds in any area reduces more desirable wildlife and, to some degree, nullifies the efforts of nature and man to replenish the population. How to effect reasonable control over predacious animals is a real problem.

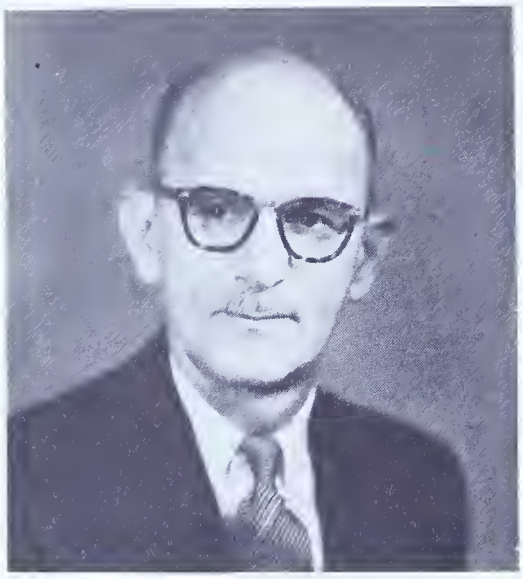
To encourage trapping of the principal predatory offenders Paul L. Failor, the Game Commission's supervisor of predator control, made a six weeks instruction tour of the state last fall. He appeared before 61 groups in 37 counties. Average attendance was 34, the total for the tour 2080. Failor's demonstrations, in most instances, were before youth groups such as Future Farmers of America, 4-H Clubs and high school hunting and fishing clubs.

Failor conducted one or two hour trapping classes, largely at schools, teaching boys the best methods for taking foxes, raccoons, opossums, skunks, and weasels.

WEASEL BOUNTY TO BE REMOVED

The Pennsylvania Game Commission, at its January meeting, acted to remove the weasel from the bounty list effective June 1, 1954. The Game Commission has paid $1 for the killing of this little animal for years.

Reasons given for removing the bounty from the weasel are: 1. No positive proof exists that weasels limit the amount of small game for hunting. 2. The high fur value of the animal assures a large annual harvest without special reward. 3. At least three-quarters of all weasels taken would have been killed at farms and elsewhere whether a bounty was paid or not. 4. Food habit studies show a great preponderance of the animal's diet is mice and other small rodents.



LEO O. LUTTRINGER, JR.

Leo Luttringer, Chief of the Commission's Conservation Education Division, was honored by the Future Farmers of America last January. At their annual convention in Harrisburg during Farm Show Week, farm youth leaders presented Luttringer with their coveted Honorary Keystone Farmer Degree for his interest in their program. The veteran Commission staff officer originated a state-wide wildlife habitat improvement contest for FFA members several years ago for which the Commission provides annual awards on both local and state levels.

Wildlife Gets A Lift Through State's Planting Program

On lands administered by the Game Commission the wildlife food and cover development program is a year around activity. Few persons realize the extent of this project through which desirable environment for wild creatures is created. Here are a few facts concerning it.

During the past several months, much of the time of the Commission's food and cover crews has been devoted to improving woodland and field borders through the removal of overshadowing tree growth. Cuttings made there not only encourage additional reproduction and sprout growth, but the shrubs and vines released increase in size and produce much larger crops of fruits, berries and nuts, so important to wildlife.

Completed plans show this winter activity will soon be replaced by a spring planting program. Through it several hundred thousand evergreens—Scotch pine, red pine, white pine, and Norway spruce—will be planted on steep slopes to produce cover for wildlife and at the same time reduce soil erosion and help maintain adequate moisture in the ground.

This spring, many shrubs and vines will be grouped along the edges of gullies and in odd corners to develop plantings that will produce food for wildlife. These include multiflora rose, gray dogwood, bayberry, silky dogwood, tatarian honeysuckle, fox grape, and bittersweet. Over one million of these food producers are planted annually on state owned and leased lands.

Wildlife foods from these native trees, shrubs and vines must be supplemented by rotation plantings of corn, small grains, clovers and grasses. The locations and types of food strips planted are determined by the soil and types of game present in each area. In the larger wooded holdings small grains, followed by seedings of succulent clover, prove the preferred foods.

In late February and March, food and cover crews will seed clovers and clover mixtures on areas planted to fall grains last year. When the weather breaks in the spring, crews will move farming equipment into managed areas and prepare the soil for oats and other grains.

Plans for each year's activities give full consideration to wildlife's current needs and farmers' right to crop protection, so far as that can be provided.

* * *

The eagle preys on the osprey by making it drop the fish it has caught. When these plundering outrages become intolerable, the ospreys of the neighborhood will band together and drive the eagle out of the vicinity.



PGC Photo by Parlaman

District Game Protector Dave Titus, Warren, Warren County is shown here inspecting a legal buck bagged in the 1953 season.

Game Inspection Stations Uncover More Than Game Cases

During hunting seasons game protectors sometimes set up stations on highways where wildlife carried in vehicles is examined, often with the cooperation of other law enforcement agencies. Knowledge that such stations are operated serves to deter would-be transporters of illegal or over-the-limit kills. Also, at such check points much information of value to wildlife managers is acquired. But the fact that wanted criminals and persons who have broken laws not on game are often apprehended during the routine is little known. The following incidents, all uncovered within one week in northeastern Pennsylvania, are cases in point.

On November 30th, on Route 29 near West Hazleton, Luzerne County, a check station was manned by game protectors, state police and fish wardens. An auto halted there carried 3 slot machines and 80 fifths of stolen whiskey. The state police seized the contraband and occupants of the car.

Late on the night of December 5th a driver refused to stop at a check station on Route 11, near the New York State line. Instead, he turned his car around quickly and took off in a new direction. Game protectors gave chase. After about 6 miles of wild driving the fugitive car blew a rear tire. Somehow the driver continued, with sparks flying from the metal rim on the concrete for about 2 more miles, when the auto careened into a ditch. Not until then did the officers learn the runaways were two 14-year-old New York State boys who had stolen the car in Pennsylvania, about 40 miles from the point of capture. The youths were turned over to state police.

On the day previous, December 4th, the car of a New Jersey hunter was stopped at a check station in Pike County. The man denied he was transporting any wildlife, but game protectors were suspicious. In the trunk of the man's auto a bear killed in close season and weighing about 100 pounds was discovered. Asked for his story the Jerseyite said he "just wanted to kill a bear," he "hadn't seen any in the Pennsylvania bear season." That case was one for the game protectors. The offender paid the customary $200 for his lawlessness and suffered loss of his hunting privileges in this state for 5 years.

THREE PENNSYLVANIANS RECEIVE NASH CONSERVATION AWARDS

Winners of the first annual $5,000 Nash Conservation Awards have been announced by George W. Mason, president and chairman of the board of the Nash-Kelvinator Corporation, Detroit, Michigan. Three Pennsylvanians were named among the twenty award winners selected by a committee of writers and editors. The committee considered more than 700 nominations submitted by officials of state, federal and private conservation agencies, and professional writers on conservation topics.

In addition to ten professional conservationists who were named winners of the awards and who shared $5,000 in cash grants for their contribution to the field, ten amateur conservationists won medal awards. The Nash Motors Division of the Nash-Kelvinator Corporation is sponsoring the contest on an annual basis.

Mason, in a statement explaining the significance of the award, said, "The automobile industry has a stake in conservation because so much of the enjoyment of the outdoors depends upon the automobile. We hope this program will impress upon the public the wide scope and scientific nature of modern conservation.

"Today's professional conservationists are mostly highly trained technicians," he said, "and these awards are going to men whose work has heretofore been little known to the general public. We also want to give recognition to amateur conservationists, without whose help the professional would be greatly handicapped."

Two Pennsylvanians were named winners in the professional class—Roger M. Latham, Chief of Wildlife Research, Pennsylvania Game Commission, for his research in deer, turkey, quail and predator problems, and for his writings on game management principles; and Orrie E. Smith, Amaranth, Pa., District Game Protector for the Pennsylvania Game Commission, for his successful after-hours experimental work in developing an improved wild turkey strain and re-establishing this bird in Pennsylvania's forests. Both received an all-expense trip to Washington, D. C., where they were honored at a dinner held at the Hotel Statler on January 7.

Latham was selected from among 729 nominees for his outstanding research studies and educational efforts to better the understanding between sportsmen of the State and the Pennsylvania Game Commission. He was nominated for the award by Dr. P. F. English, professor of wildlife management, Pennsylvania State University; Dr. Logan J. Bennett, executive director, Pennsylvania Game Commission; and Fred Everett, artist and author, of Chatam, New York. For the past 16 years Latham has conducted laboratory and field experiments which have proved invaluable in the scientific management of the State's wildlife. In addition, his prolific writings and innumerable speaking engagements have been major contributions to the acceptance of controversial wildlife measures by hunters.

Among research projects which Latham has undertaken were: a survey of the Pennsylvania wild turkey range and a study of the requirements of the bird; extensive studies of the white-tailed deer; a detailed examination of the reasons why the bobwhite quail was no longer prospering in the state; and an intensive analysis of the predator problem and bounty system.





Above, left: Roger M. Latham, of Newport, chief of the Game Commission's Wildlife Research Division, was one of the twenty national award winners in the Nash Conservation Awards contest. Above, right: Orrie E. Smith, of Amaranth, district game protector, was similarly honored for his outstanding work in originating and developing Pennsylvania's wild turkey restocking program. Below: Lawrence F. Blaney (right), of Aliquippa, is presented a Nash Conservation Award by George W. Mason, president and chairman of the board of the Nash-Kelvinator Corporation. Blaney, who is a non-professional conservationist, was honored for his work in developing conservation activities among teen-age school children.



District Game Protector Orrie E. Smith, of Amaranth, was selected for his outstanding work in originating and developing a wild turkey restocking program. He recently received national recognition for his work when he was honored for "distinguished service in the cause of wildlife conservation" by *Outdoor Life Magazine*. Smith was nominated for the Nash award by Arthur G. Logue, Field Division Supervisor at Huntingdon.

In 1930 the Pennsylvania Game Commission brought 1260 acres of land in Lack Township, Juniata County, where a wild turkey farm was established. Smith worked there for four years to produce a true wild turkey that would develop into a good, wild game bird. Initial results were unsatisfactory because Smith was unable to obtain pure wild turkeys for breeders. He then conceived the idea of mating wild tom turkeys with farm-raised hens to create an improved strain, and after two years, his experiments proved successful. The Commission then established two temporary propagation pens with open tops in Fulton and Northern Huntingdon Counties. Because of this operation's success, thirteen more pens were later established in the state's southcentral counties. As a result of Smith's original idea and untiring experiments, the Pennsylvania Game Commission today develops some of the finest wild turkeys found anywhere in the country and large areas of the state have been restored as "turkey country."

Lawrence F. Blaney, of 3200 Cleveland Avenue, Aliquippa, Pennsylvania, a history instructor at the Aliquippa High School, was selected as one of ten private citizens who has made an outstanding contribution to his country's conservation of natural resources. Blaney won his Nash Conservation award because of his work in developing conservation activities among teen-age school children. His nomination was forwarded to the judges committee by Darlene Fuss, student at Aliquippa High School, on behalf of the 40 members of the school's Conservation, Fishing and Hunting Club. It was through this club, which he organized and has guided, that Blaney has been able to make his greatest strides in teaching young people about conservation. Throughout his teaching career he has waged a one-man battle to impress upon the minds of high school students the vital importance of conservation and good sportsmanship.

He has not only preached conservation in classes, but regularly conducted student fishing trips to demonstrate methods which result in greater skill and less waste of natural resources. Particularly impressive to parents of school age children is Blaney's continuing program to stress safety in handling of guns. Although he has devoted endless hours in conducting conservation projects both at home and in his school, he has found time to win recognition in other fields. He recently was the recipient of a citation from the Women's Committee of the National Conference of Christians and Jews for his work in promoting tolerance and harmony among races and creeds in the Aliquippa High School.

The Committee on Awards consisted of Michael Hudoba, Washington Correspondent of *Sports Afield Magazine;* Johnny Mock, Conservation Editor, Pittsburgh Press; Ed Dodd, creator of the "Mark Trail" cartoon strip; Alastair MacBain, Chief of the Information Bureau, U. S. Fish and Wildlife Service; and Pieter W. Fosburgh, Editor of the *New York State Conservationist.*

SLANTS and ANGLES



Dear Editor:

When living as a boy in Cameron County, my every spare moment was spent in hunting, fishing, or exploring the outdoors. I believe that I knew the whereabouts of every deer within a five mile radius of my home. In those days we had few—very few—deer. Some deer were in what is now known as Sizerville Park, occasionally one got into the Cowley Run area, but there were none in Sizer, Indian, Parker, or the Half Mile sections. Sometimes we would find one deer in the head of Potato Creek. It is doubtful that there was one deer for each 15 square miles.

Imagine, if you can, my surprise when I returned to this same area in the 1920's. Imagine, again, my surprise over the kill of deer in these same woods in 1949. I calculated the take that year in the four northern tier counties—Elk, Cameron, McKean and Potter—to be 10.2 deer per square mile. The Pennsylvania Game Commission is really doing things!

Yours very truly,
Edwin E. Fairchild,
Los Angeles, California

Dear Sir:

I am returning to you herewith your band number 11654, worn by one of your Mallards which sneaked over the State line on one of his philandering expeditions.

I shot him at Spencer Marsh, near Spencer, New York, on October 24, 1953. Sorry the band got dented but the old drake was scratching his ear when I aimed at his head.

With best regards, believe me,

Dr. Arthur A. Allen,
Cornell University,
Ithaca, New York

Dear Editor:

Enclosed is a photo of a game feeder which was stolen from the camp of the Nescopeck Hunting and Rifle Club located in Stewardson Township, Potter County, along the Lebo Branch of Young Woman's Creek. The feeder would hold nearly four bushels of corn, and wardens of the area kept it filled when club members were not around.

The boys are quite worked up about its theft, and rightly so. Virgil Hettinger, club secretary, reports that the feeder was taken some time during this past summer although its disappearance was first noticed in October. Anyone having information on this feeder, or those responsible for its theft, are asked to contact Mr. Hettinger at 332 East 11th Street, Berwick.

Sincerely,
Keith Schuyler,
Berwick



Dear Editor:

Complaints can be heard any hour of the day, any day of the week when two sportsmen get together. But when some old joker starts grumbling to himself like I'm doing here at home, it's time for a change. Tonight I'm thinking over some of the things that happened during the last half of 1953. If they continue to happen, our hunting sport will go along the primrose path to the everlasting bonfire.

Near home, down here in the southeast, one farmer had a darn fine steer shot by some chuck hunter. Another had several ducks shot, still another had four good healthy chickens shot. Results—only two farms posted but there may be more before that steer loser gets through talking to his neighbors.

Up around my old home where every corner of the woods would produce a deer a few years back, the forests have now grown up. Deer feed has been carried right up with that growth so today it's work for your sport or no buck. But that's not the only problem.

We have a jeep epidemic. Those jeeps will go anyplace that the owner sees fit to drive them—meadow, wheatfield, pasture, up one woods trail and down another, out through the barnyard and leave the gate open.

While turkey hunting in this region, I was talking with one farmer who said he was not going to post against doe hunting. But during buck season I noticed this same place was literally plastered with posters. So we stopped to ascertain the reason. Turned out he had three of them—all good. 1. His daughter had a bullet slap into the corner of the house near where she was hanging out the wash. 2. The man that did it tried to run the owner off his own property. 3. His wheatfield was between two parallel roads, on one of which was located a school house and about 20 residences. Some fellows got on the other road and laid down a barrage of lead at a wheat-eating buck directly in line with the school and some of the houses. Then, because there was a little ice on the road across his field, they took to the grass where the ground was soft. In their jeep, they chased the buck about one-third of a mile into the woods.

So, I guess we will have to hunt a few nuts or sell our rifles.

L. F. (Shorty) Manning,
Prospect Park, Pa.

District Game Protector John Putnam, left, of Hydetown, Crawford County, and Chas. Swarts, Titusville, inspect an illegally killed albino button buck. Hunters who killed the rare animal in the 1953 buck season threw it from their car when they feared apprehension and the deer, when found several days later, was unfit for any use.



Dear Sir:

In traveling afoot, and over the railroad on an engine, I have been able to observe wildlife from a unique position. Many hundreds take to the field from parked cars at the road crossings of a railroad. They start to hunt along the tracks and adjacent fields, knowing that there is game to be found handy. But few

stop to realize why the conditions are so that they may be successful.

The railroad companies through the early spring months always cut the high brush and perennial weeds to the ground, making exceptionally good game cover. Freight trains that haul ladings of grain are spilling the grain from one end of the track to the other and this provides more feed for wildlife. Also, cars carrying fertilizers are seeping and blowing it to fertilize the surrounding territory which makes healthy vegetation for animals to eat and thrive on.

I have noticed after the hunting seasons are over that there is usually plenty of game left along the railroads. Through the winter months the non-migratory birds can be seen in large flocks along the rights of way, feeding on the various grains that have dropped from the cars. Just the other day I noticed a flock of 30 blue jays and cardinals along the tracks. Even crows moving north in the spring often follow the railroads and it is a great joy to watch the pheasants feeding as you approach them on a train. Through a number of years, I can truthfully say I have not seen any of them hit since they manage to always get clear in time. On clear, frosty nights, rabbits play on the tracks and this provides entertainment at its best. Later on, in March and April, the young appear as small balls of fur. I have also seen as many as ten or twelve squirrels per mile as they feed among the ties and stones. All in all, many kinds of wild birds and animals can be observed in the headlight of the engine, which is like a spotlight on a floor show.

If all the hunters could see this show, I believe they would take a lesson from the railroads and follow suit by helping to improve some of the other areas not handy to railroads to provide better hunting.

Yours truly,
S. P. Rick,
North Girard, Pa.

Hooligan Hunter

So long as the hunting fraternity is made up of a cross section of our citizenry disgusting stories like the following will probably continue to come out of the woods.

Since last summer, outdoorsmen have been amused at the presence and the antics of a family of goats—billy, nanny and kid—who took up residence on State Game Lands No. 14, southwest of Emporium in Cameron County. The little beasts had evidently strayed there from a farm and found living in the wild to their liking.

On numerous occasions the members of the friendly goat family were petted by hunters in the 1953 small game and bear seasons. Billy was an amusing character. He wore a dirty-white coat, had been dehorned and sported an 18-inch beard that nearly reached to the ground.

On December 5, buck deer hunters on the game lands heard a goat bawling pitifully, then heard no more. Investigating, they found Billy lying dead from a rifle shot in the belly. Nearby, a small fawn deer lay freshly killed. Of course, the slayer or slayers had left the scene. The angry sportsmen who viewed the senseless killings could hardly be blamed for supposing both animals were laid low by the same hoodlum gunner.

Evolution and the Bow

By Tom Forbes

BECAUSE our ancestors shot a bow 5,000 or 50,000 years ago, do you believe that we can, through instinct, shoot a bow today? Do you feel that, in order to hit a mark or bag a buck, all you have to do is take a deep breath, look at the target, draw the arrow back to the ear, and let fly?

Well, if you buy that line, you will not be any better a marksman than your remote ancestors. Legends about Robin Hood's merry men to the contrary, your ancestors were inferior marksmen by modern standards. With primitive equipment, they developed the art of stalking game to a high degree in order to close to point blank range for whatever hits they was able to make.

In the thousands of years since man first stood on his feet and walked, the period in which he has used missile weapons is of relatively short duration. No one can fix the exact "time" of man's arrival on earth and even as late as 1860 the majority of scientists believed man's existence covered a span of less than 6,000 years. Since then, evidence of man's antiquity indicates he was in existence at the beginning of the Pleistocene period, between 40,000 and 25,000 years ago. About 10,000 years ago, Neolithic man migrated to Western Europe, the first ancestors of the modern European who learned to use the bow. Neolithic culture is characterized in part by the abundance of stone arrow heads. The origin of the bow, however, is lost in the uncertainties of fixing exact dates for the different cultures of mankind. Excellent drawings of archers are found in Paleolithic carvings at Castellon, Spain, carvings which date back from 15,000 to 35,000 years.



If there is one thing that differentiates man from all other forms of life, it is that he is a reasoning creature and not one primarily motivated by instinct. In other words, man is not the creature of habit that some persons would have us believe. Even though he does profit by his errors and learn from experience, man experiments, modifies, and improves (for his own ends) all things with which he comes in contact. The change is so slow, however, that at times it is almost imperceptible.

Contrary to popular belief, the reflexed, laminated bow is not a modern product. In Asia, during the early periods of recorded history, great military nations used a composite, reflexed bow of horn, wood and sinew that had a drawing weight up to 100 pounds. The metal bow, however, is a product of the 20th century while the latest development in the boyer's art is the fibre-glass bow.

Even the most casual student of history must conclude that individual aimed fire of missile weapons is a relatively modern development. The tactics employed by the military nations of the past in the use of missile weapons, such as the bow, all show how little importance was attached to accurate marksmanship.

American archers have been strongly influenced by the six foot English long-bow which for hundreds of years was the sole missile weapon of Great Britain's foot-soldiers. England's supremacy as a military nation

was prediated on the skill of the foot-soldier armed with this bow. By law, every male from 16 to 60 years of age was required to own and practice with the long-bow. Even price regulation was known in those days. Since England's safety depended on her archers, the price of a good bow was fixed by law so that no man could plead that he could not afford one.

During the Wars of the Roses and in the Hundred Years' War, the archers were the elite troops of Great Britain. They were the decisive factor in many a hard fought battle. At Crecy, France, in 1346 the English long-bow proved its worth for the first time. The English, under Edward III, lay on the forward slope of a hill with their right flank resting on the River Maye at Crecy and their left on the village of Wadicourt. Two divisions, or battles as they were then designated, consisting of a center of dismounted knights and men-at-arms plus two wings of archers formed the first line. A third division was in reserve. The total force was 3,900 men-at-arms, 11,000 English archers and 5,000 Welsh light troops.

The French, under King Phillip of Valois, had much greater strength, numbering at least 13,000 men-at-arms, 6,000 Genoese cross-bowmen and over 20,000 foot soldiers. The English chose the battlefield and were drawn up waiting for the attack. The French host, marching in column, came unsuspectingly upon the English position when they arrived at Estrees. Phillip could not control his unruly feudal lords who, instead of deploying and forming for action as an army, attacked piecemeal with their contingent of troops.

The cross-bowmen and the English archers opened the battle. After a brief contest, the cross-bowmen, outranged by the long-bows of the English, were forced to retreat. Through these men the first line of French knights tried to charge the English men-at-arms. Into this confused mass



Photo Courtesy Bud Sheerin, Kingston.

Joseph Konnick, of Kingston, bagged this fine buck during the 1953 special archery season in Buck Township, Luzerne County. The successful archer used a bow pulling 60 pounds and downed his deer at 3:30 p. m. on October 13th.

the English archers shot with deadly effect. As successive waves of French knights tried to reach the English lines, they but served to increase the number of casualties, exposing themselves to the pointblank flanking fire of the English archers.

From the beginning of the battle, there could be but one result. The French army was practically annihilated. For the first time the cavalry arm had met its equal. The choice of ground, the massed firepower of the English archers, and the stability afforded by the steady spearmen made a tactical combination that proved unbeatable.

As firearms improved, they gradually replaced the use of the bow in English warfare. The forces of Elizabeth were the last to use the bow and of all the long-bows that were made and used in England, only four examples have survived to the present day. Two of these were recovered from the wreck of a ship which sank in the Thames during the reign of Henry VIII.

The tactical use military men made of the bow was predicated not on the skill nor marksmanship of the individual archer but on the premise that serious casualties could be inflicted on an enemy by massing the fire of hundreds and thousands of archers. They actually filled the air, in the words of old writers, with a cloud of arrows.

When the musket replaced the bow, the same tactics were employed. No attempt was made toward individual aimed fire. Bodies of troops fired volleys by command. The lines formed two deep in close order facing the enemy. When the first line fired a volley, it dropped to one knee to reload while the second line fired their volley. Muskets were smooth bored weapons, without sights, and throughly inaccurate by any modern standard.

Infantry tactics, employing the massed fire of troops in close order, was still favored by the military throughout our colonial period. Accounts of Braddock's defeat at the hands of the French and Indians tell of the British regulars standing in close formation and firing volleys into the surrounding forest at an invisible foe. Not until the latter half of the 18th Century is the practice of individual aimed fire evident in accounts of military campaigns. The Pennsylvania rifle used by the colonial frontiersmen proved to be one of the first deadly weapons. With this famous firearm, individual, aimed fire first proved its superiority.

To those who advance the proposition that man has inherited, through his remote ancestors, an instinctive ability to shoot a bow, I submit the above historical evidence. It clearly shows that ancient bowmen had neither the equipment nor ability to deliver accurate shots. Rather, they relied on filling the air with clouds of arrows, fired at close range, in the hope that some of their shots would find their mark. While it is true that any modern man can pick up a bow, nock an arrow, and loose it in the air, it is also true that, without diligent practice, that same arrow will probably fall to earth, we know not where. When it comes to being an expert archer and marksman, the only substitute for practice is, not instinct, but more practice.

Sights are a relatively new addition to missile weapons and their value has been proven to the point where it is no longer debatable. Modern archery tackle is an improvement over anything available in the past. The technique and brand of equipment you use is a matter of personal choice. But the ability to do the same thing in the same manner each time you release an arrow will come only through practice. And practice, not instinct, will get you hits on the target or in the hunting field.

. . . *The End*

Maine Hunters Bag 1,000 Trophy Bucks

One out of every 38 hunters shot a trophy 200-pound buck during the 1953 any-deer season in Maine. Preliminary totals of the deer harvest "down east" showed 38,609 deer were taken during the month long season last fall and that about 1,000 hunters qualified for the "Biggest Bucks in Maine Club."

By December 4, 1953 successful hunters reporting their big bucks totalled 909 but the Maine Development Commission said more cards were in the mails and that the figure definitely would run over the thousand mark. This is an all-time high for big bucks. The '53 deer kill compares with 18,935 for 20 years ago and with 24,408 a decade ago. The buck club totals by years since inception of the club show 837 200-pounders were shot in 1949; 664 in 1950; 804 in 1951; 848 in 1952; and at least 909 in 1953.



Wind Deflection

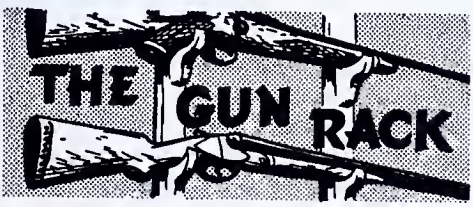
By Ed. Shearer

WIND is probably the greatest disturbing factor to the flight of the bullet that the rifleman-hunter has to contend with. It is also the least appreciated and its effect is least understood on an otherwise well aimed shot by the average hunter. It is also a factor that no rule, method of computing, or observing will result in arriving at a correct solution. Calculation of the wind drift of a bullet has, so far, never been much more than an approximation.

The effect of a side wind on a flying projectile is to cause it to drift out of its normal straight course to a greater or lesser extent. For instance, a head wind retards the bullet and a rear wind accelerates it, causing it to strike higher or lower than normal. Whether the wind affects the bullet by pressing on it or because the bullet is floating in a moving medium is not precisely known but the effect is the same. Thus it is important to know the direction and velocity of the wind.

For the purpose of clarity let us consider a rifle range as though it were the face of a clock, laid on its back, the target being at twelve o'clock and the shooter at six o'clock. Thus a wind blowing from the right at exactly right angles to the line of fire would be termed a 3 o'clock wind and one blowing straight towards the shooters would be termed a 12 o'clock wind. Three and nine o'clock winds will cause the greatest amount of lateral deflection. It is generally assumed that two, four, eight and 10 o'clock winds cause about three-quarters the lateral deflection of three or nine o'clock winds, while one, five, seven and 11 o'clock winds have about one-half the same effect.

The velocity of the wind is always



stated in mile per hour of its drift. The velocity can be measured by an instrument called an anemofeter. But lacking said instrument the hunter must make his own estimate and hope that he is correct.

On some rifle ranges you will find wind flags have been placed so that some idea of the wind velocity can be gained by the angle the flag stands out from its staff. This however, is of doubtful value as flags of different materials and size will stand out differently.

Probably the quickest way to get a clear picture of wind direction and velocity is to go to a rifle range and get a look through a spotting scope used by target shooters. There is a mirage almost always present in summer. The spotting scope is focused on the target. The atmosphere will then appear to flow like water flows over the bed of a clear brook. The direction of the mirage flow indicates the direction of the wind. Changes in rate of speed of mirage flow show changes in wind velocity. If the mirage flow stops and boils straight up it indicates a lull in the wind. Six and twelve o'clock winds will also cause it to boil. The Gimick is that, although you can see the wind direction, there is no way to tell how many miles per hour the wind is blowing.

The target shooter solves this problem by watching this mirage flow and using his sighting shots to determine the amount of drift of his bullet from his normal zero. He then tries to fire his record shots when his scope shows the same rate of flow, providing his time limit holds out. But the hunter gets no sighting shots. His is a right now proposition, which we will come to later.

Wind direction being the same, the deflection of any given bullet is approximately in proportion to the velocity of the wind. A 10 mile wind will deflect a given bullet, fired at the same velocity at the same range, twice as much as a five mile wind. But different type bullets at various velocity are not equally affected by the same velocity wind. It thus cannot be stated positively that a bullet moving at high speed will be deflected less than will the same bullet at low velocity. Nor will a heavy bullet surely be deflected less than a light one.

The longer the range the greater will be the wind deflection, although not in proportion to the length of the range. For example the 220 grain Krag bullet will have about one-fourth the wind deflection at 200 yards it will have at 500 yards and about four times the wind deflection at 1000 yards that it has at 500 yards.

There are three basic factors that govern the wind deflection of a bullet. (A) the velocity and direction of the wind; (B) the length of the range; (C) the delay of the bullet over that range. The delay is the difference in the time of flight over a given range, between the actual measured time and the time calculated from a muzzle velocity, if the bullet had been fired in a vacuum.

The delay time is very much dependant upon the ballistic coefficient of the bullet and its muzzle velocity. The ballistic coefficient of a bullet is the sectional density of the bullet or length and diameter in proportion to the weight, plus the shape, whether the bullet is flat nose, round nose or pointed, which is an index of the bullet's ability to overcome air resistance. Bullets starting at a low velocity will sometimes lose less velocity in proportion than the same bullet starting at a higher velocity. This brings us to zones of favorable velocity brackets which sometimes tends to upset otherwise good calculations.

The air resistance varies as the square of the bullet's velocity at certain speeds. At other speeds the air resistance factor must be assumed to be much greater. Roughly we can



PGC Photo by Parlaman

Commissioner H. L. Buchanan (right), of Franklin, extends congratulations to a successful hunter on the first day of the 1953 bear season. The bear was killed on State Game Lands 54, Elk County.

assume three major velocity brackets in which the air resistance factor is of somewhat greater power than the square of the bullet's velocity. These critical velocities are approximately 1100 ft. sec. to 1650 ft. sec.; from 2200 ft. sec. to 2750 ft. sec.; and from about 3200 ft. sec. to 3750 ft. sec. the air resistance is very much greater than it would be were its velocity in the favorable brackets of 600-1100 ft. sec. or 1700-2200 ft. sec. and 2800-3100 ft. sec.

An example: the 22 regular long rifle cartridge with a muzzle velocity of about 1050 ft. sec. (or under the speed of sound) is in a favorable velocity bracket. The high velocity 22 long rifle with a muzzle velocity of 1340 ft. sec. is in an unfavorable velocity bracket. That accounts for the greater delay or lag of the high velocity bullet and its greater wind deflection as compared to the same bullet in the standard 22 long rifle cartridge. This is of great importance to Varmint shooters and long range big game hunters who are handloaders as they can adjust their velocities to take advantage of these favorable brackets. For instance, the hot little 222 Remington cartridge can be loaded to start out and travel in a favorable bracket all the way from 175 yards to 300 yards, which means a lot in Varmint shooting.

The average deer hunter is seldom bothered with wind deflection as the average shot is 75 yards or under and a medium velocity rifle with good weight bullet is generally used. But on a blustery day such as the last day of doe season this year, he could run into trouble on a 150-200 yards shooting. The wind at times would come in gusts of 25 to 30 miles per hour. A puff of this wind crosswise would blow a 30/30 about one and one-half foot at this range. The hunters rule of thumb, to allow as much for wind deflection as elevation under ordinary conditions usually works out all right.

The Varmint shooter must either learn to dope wind, stay at home on windy days or accept a lot of misses afield. The best way is to use one gun—select one bullet that is a good wind bucker and stay with it. Learn to classify winds as slight, moderate, moderate strong or very strong and estimate allowance just the same as the camera fan judges light intensity and sets his shutter stop for it. Good wind doping requires a lot of time and practice but there is only one reliable way to obtain accurate wind dope—do a lot of shooting on windy days.

. . . *The End*



In fall, 1952, the *Greensburg Sportsmen's Association,* purchased ten pounds of Chinese chestnut seed at a total cost of $15. These seeds, along with planting instructions, were distributed to members and to cooperating farmers in the area. A count, taken at a subsequent meeting to determine percentage of survival and germination of the seeds, showed approximately 377 percent of seeds planted developed into sturdy seedlings. Using approximate figure of 40 seeds to the pound, the club thus produced 150 seedlings at a cost of about ten cents per seedling. Compare this with lowest nursery figure of fifty cents per seedling . . . good conservation, good business! . . .

Members of the *Tedyuscung Sportsmen's Association* always looks forward to their January meeting. Every man brings some item of used (or abused) sporting equipment, clothing, household goods, books—in fact anything they think might drag a dime out of some worthy member during an annual auction sale. All items donated, all sold amidst great fun for all, and all proceeds go to club. "Caveat Emptor" or "Let the purchaser beware." . . .

A Chandler, Arizona sportsmen's club dreamed this one up. . . . They printed cards for all members addressed to "Mr. Merchant." When a member buys gasoline to go fishing, he hands the station owner a card. When he pays the grocery bill for food to be used on an outdoor camping trip, he gives a card to the grocer. The card informs the merchant that the purchase is the result of a hunting or fishing trip; it's all a plan to make them more aware that hunting and fishing mean more business to people selling all kinds of goods and services. Good idea!

Members of *Etna Sportsmen's Club,* Allegheny County, assisted a farmer in one of the neighboring counties to husk six acres of corn last fall. . . . About ten men turned out on two Saturdays to do the job.

Last spring the Plains Conservation Club of Plains, Luzerne County, undertook tree planting on State Game Lands 91. Four Scout Troops were represented with five boys from each. According to District Game Protector John Behel, of Wilkes-Barre, 1,000 pines and 1,000 multiflora rose seedlings, secured from the Pa. Department of Forests and Waters, were planted successfully by this club.

With patriotic singleness of purpose, *The League of Ohio Sportsmen* has thrown its weight into the conservation battle, as shown by extracts from their Statement of Policy For Wildlife and Natural Resource Control for National Application, here quoted. In the statement we find: ". . . The basis of our national wealth is our American resources. In violating the immutable laws of nature we build our own destruction. Our economic system must not overlook that the scientific approach to conservation of our

soil, water, forests and wildlife must keep them solvent and productive. Conservation must be considered as serious business of statesmen and government.

"We need planning, better planning, and to plan further ahead. We need coordination between states, individuals and the Federal Government. A united front only will prevent unwise drainage and destructive land use practices . . . . Long range programs in game and fish management of the several states are necessary for restoration and perpetuation. . . .

"The natural resources of our nation are the basis for our strength and continued production capacity and are the materials upon which our defense must be fundamentally built. We believe that the Federal Government's Budgetary experts do not give sufficient thought to such values when they play down recommended moneys for resource conservation and restoration programs."

The Fable of the Grumbling Sportsman

ONCE upon a time there was a sportsman who did a lot of bellyaching. He complained that the lakes in his part of the country were all fished out, that trout were headed for extinction, and that there wasn't as much game left in the woods and fields as you could find on a tennis court.

He grumbled so much he finally convinced some of the local boys that they ought to do something about the terrible state of affairs. So they got a handbook full of information and organized a sportsmen's club. Of course they invited him to join.

But he was too busy and he couldn't spare the three bucks for dues, and so the club had to get along without him.

They did the best they could. They signed up most of the hunters and fishermen in town, and then they went out and sold the idea of conservation to the farmers for twenty miles around. They put on a fish fry and invited their farmer friends. Pretty soon a lot of no-trespass signs came down.

They planted cover patches, and pheasants and rabbits increased. They stopped pollution in the stream that ran through town, and fishing began to pick up. They launched a program to help the local conservation officers, and the poachers gradually went into retirement. They even helped elect a governor who took conservation matters out of politics, and hunting and fishing began to pick up all over the state.

Finally somebody caught the bellyaching sportsman in an unguarded moment and signed him up for membership. He attended one meeting and spent two hours grumbling because the fall was later than usual, there was too much heavy brush for good hunting, and the duck flight didn't come down on time. When the club refused to vote for a ninety day duck season and for firing the state game director, he walked out in a huff and never went to any more meetings.

Next year nobody tried to talk him out of his three bucks, and he went around town saying the club was getting to be a one-man outfit and oughta have a whole new set of officers.

Moral: Some guys get less hunting and fishing than they deserve, but some guys get a lot more!

. . . *Reprinted from Michigan-Out-of-Door, December 1952.*

Dr. Bennett and Bird Dogs

By Herbert Kendrick

ONCE again the Pennsylvania Game Commission has appointed as an executive director, a leader who uses well-trained bird dogs to enjoy the superlative sport of upland gunning. During the years of wildlife study and experience of our Executive Directors, the proof of the value of a gun dog to conservation has been established.

Seth Gordon spent many pleasant hours in the woods and fields with his Irish setter, and Tom Frye always used his cocker spaniel for grouse hunting.

Dr. Logan J. Bennett comes to us with years of experience in training and using the finest gun dogs in our area. His dogs have been invaluable to the research departments of conservation organizations in North America, by locating game for surveys and the making of motion pictures used in wildlife education. Aside from furnishing great sport to Dr. Bennett and his friends, his setters have contributed a great deal in instructing new hunters in the field.

Seven years ago I had the opportunity to hunt with Doc over the famous "Pat" who was in my opinion the greatest woodcock and grouse dog I ever knew. In the swampy lowlands between the mountains near State College "Pat" performed such feats I hesitated to write about them for fear of criticism for exaggeration. The leading writers of Gun Dog articles and books have glorified "Pat" over and over again.

Dr. Bennett trained the big setter from puppy age, and no professional trainer could have completed the schooling more perfectly.

After Pat came his daughter "Queenie" following in her illustrious sire's footsteps. During the past open season this dog established twenty-seven perfect points on grouse in a single day. What more do we need to say about a gun dog?

Our Director's methods of training differ somewhat from other sportsmen. Bennett believes in starting yard training while the puppy is two or three months old. No pressure is applied at so early an age; however, in a quiet easy manner the youngster is taught strict obedience at all times.

In the woods his dogs are trained at an early age, and a fair amount of shooting is done over his dog's points when they are only a year old. We are speaking of grouse and woodcock dogs as specialists on these two game birds. A Woods-working dog is not required to range as wide as the pointing breeds used on quail in wide open country, so Bennett starts them early and restricts their range from the beginning so that serious faults do not mar future hunts.

He believes in starting a grouse and woodcock puppy on these birds rather than training on quail or ringnecks, and switching later. This theory makes sense to me, although I realize it may be a more difficult procedure.

A dog is not a finished performer unless he is an excellent retriever, and Dr. Bennett spends countless hours teaching his dogs this aid to conservation. His intense studies in





PGC Photo by Batcheler

"Pat," greatest of them all. This nationally famed woodcock and grouse "master" was trained from puppy-hood by Dr. Bennett and hunted much of her life in Pennsylvania.

wildlife conservation have taught him that a retriever saves countless numbers of game birds each season.

Doc has hunted with noted sportsmen in this country and in Canada, and has recently completed a valuable motion picture on woodcock migration and hunting from New Brunswick to Louisiana. His accomplishments in the field enhance his value to every sportsman of our state. We may rest assured that he will do everything in his power to continually improve hunting.

His influence should inspire many more hunters to develop, train and employ more good gun dogs in the woods and fields.

Since Doc returned to Pennsylvania I have reread his book on training grouse and woodcock dogs, and spent some time with him in discussion of dogs. These extremely pleasant associations have led me to purchase a new setter puppy, which I hope to train for grouse. If he finishes one half as valuable as Queenie or Pat I shall be more than pleased.

Even though the number of gun dogs has greatly increased during the past ten years in our state there are still many hunters who have not yet learned the exciting thrill of owning, training, and using this important adjunct to the gun.

Selecting a young pup, yard training, frequent trips to the woods and fields, and the lovable companionship of a bird dog can be as pleasant as shooting, and at times, more so.

Logan Bennett will recommend your owning a dog, and will set an example for us to follow.

Bird dogs are not the only occupants of the Bennett kennels. He has a Beagle hound and a Dachshund. Perhaps his wife and son claim ownership to them, but you know they are very dear to him.

We are indeed fortunate to have as our executive director a man who loves dogs, enjoys hunting, admires sportsmen, and possesses the ability to wisely direct our wildlife forces.

. . . *The End*



AFRICA COMES TO PENNSYLVANIA! From mid-February to mid-May, Pennsylvania sportsmen will have a chance to explore the "dark" continent, at least through the eyes of a kodachrome camera and the personal narration of Wally Taber, nationally-known sportsman. Taber, shown above with a Tanganyika warthog, will tour the state under the auspices of the Outdoor Writers Association of America and local sponsorship of clubs affiliated with the Pennsylvania Federation of Sportsmen's Clubs, showing his double-feature length films some seventy times this spring.

Is Your Number Up?

Your GAME NEWS number, we mean! Take a careful look at the mailing label for this issue. The number printed in the upper right corner will tell you when your present subscription expires. The first digit indicates the month (1 for January, 12 for December) and the other two numbers signify the year. And, please, send us your renewal order at least 45 days in advance—we don't want you to miss a single copy of your magazine. The subscription blank printed below for your convenience makes it easy to keep GAME NEWS coming!

PENNSYLVANIA GAME NEWS SUBSCRIPTION ORDER

Please renew my subscription for GAME NEWS as follows:
$1.00 per year $2.50 Special Rate for Three Years

Name .....

Street or R. D. .....

Post Office .....

(Make check or money order payable to: Pennsylvania Game Commission)

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
WILBUR M. CRAMER ..... *Asst. to Exec. Dir.*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 14 W. 1st St., 2nd Floor, S.S., Oil City. Phone: 4-6281
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

MR. BEAVER,
Civil Engineer



HIS DAM

Constructed of sticks, logs, stones & mud this huge structure converts a tiny mountain stream into a sizeable pond, making trees for food & building purposes readily accessable by water. The same water, because of its added depth, gives the Beaver a refuge from his enemies and the weather.



HIS CANALS

Trees growing far inland are floated through these water-filled ditches to the dam, sometimes several hundred feet away.



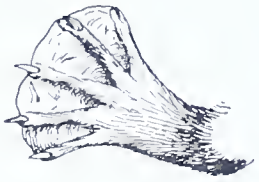
HIS HOUSE

This big (20-30 ft wide) heap of sticks and mud contains a cozy room above the water-line and an underwater entrance

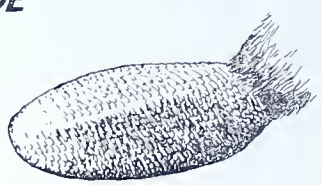
THE TOOLS OF HIS TRADE



Chisel-like teeth enable the Beaver to fell a 3" tree in 6 minutes.



He owes his reputation as a powerful swimmer to his broad, webbed hind feet.



His flat, muscular tail serves as a prop while he sits upright to cut a tree, and he slaps it on the water as a danger signal.

NSYLVANIA STATE LIBRARY
UMENTS SECTION

PENNSYLVANIA

Game News

RCH 1954

10 CENTS



P38.34
1:6

E. L. Poo



THE STORY BEHIND THE COVER

IF a popular vote is ever taken to select one species which best symbolizes wildlife, National Wildlife Week, and resource conservation generally, the winner will probably be the big, black bear. From the cherished memories of Goldilocks and her "three bears" to the modern fame of "Smokey," the forest fire prevention bear, no other wild animal is so well known or so much liked.

Particularly in Pennsylvania, the black bear has always been famous. Here in 1905 this big buffoon of the tall timber was first given legal protection through closed seasons and here, too, bear cubs were first safe-guarded by law since 1925. Sportsmen and a sympathetic public in our Commonwealth have long recognized the bear as a valuable trophy of the chase, an economic asset when his numbers do not exceed his native food supply, and a smart adversary in the constant test of modern man against primitive nature.

One sure sign of spring is the rare sight of a mother bear and her cubs just emerging from their winter quarters in March. This month's cover painting by Dr. Poole presents a striking comparison, one that most hunters would do well to note and remember. Contrary to popular opinion, there is a vast difference between the size of a little bear and a big bear—even when sighted over a rifle barrel in the fall. When the cubs are born in late January or early February, they weigh between nine and twelve ounces and are only about eight inches long—roughly the size of a red squirrel. Their mother is at least two hundred times bigger than her off-spring. On top of that, bear babies are blind and practically naked at birth.

There is no more devoted care given young wildlife than that shown to bear cubs. In fact adult black bears are only dangerous and bold when they are rearing their cubs. At other times, bears are usually shy, secretive and relatively peaceful. But tamper with bear cubs in the presence of their mother and you will probably encounter danger that is amazingly quick and agile, surprisingly fast, and terribly strong. The best rule to follow in dealing with bear cubs is LEAVE THEM ALONE!

Pennsylvania, with an increased population of black bears, will set the scene for this month's cover many times during the next few weeks. As late winter snows slowly melt, the old she-bears leave their sleepy-time dens with their cubs. This year sportsmen, mountain farmers, and game officials will be watching the biggest game animal of Penn's Woods with unusual interest. The size of the cub crop this March will be one major indication of what the farmer and hunter can expect from the bruin family in the months that lie ahead.

PENNSYLVANIA
Game News

Published Monthly
by the
Pennsylvania Game Commission

Vol. XXV No. 3

Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

CONTENTS

The Otter—Pennsylvania's Rarest Furbearer 4
By Dr. Earl L. Poole

Deadline For Wildlife 10

Pennsylvanian's Notebook 14
By Bill Wolf

Over Tioga County's Rolling Hills 19
By Ivan McKeever

Field Notes 25

Federal Aid in Wildlife Restoration—Northeastern Pennsylvania 29

Double-Dog of Devil's Ridge ... 39
By Keith Schuyler

★

Cover Painting
By
Earl L. Poole

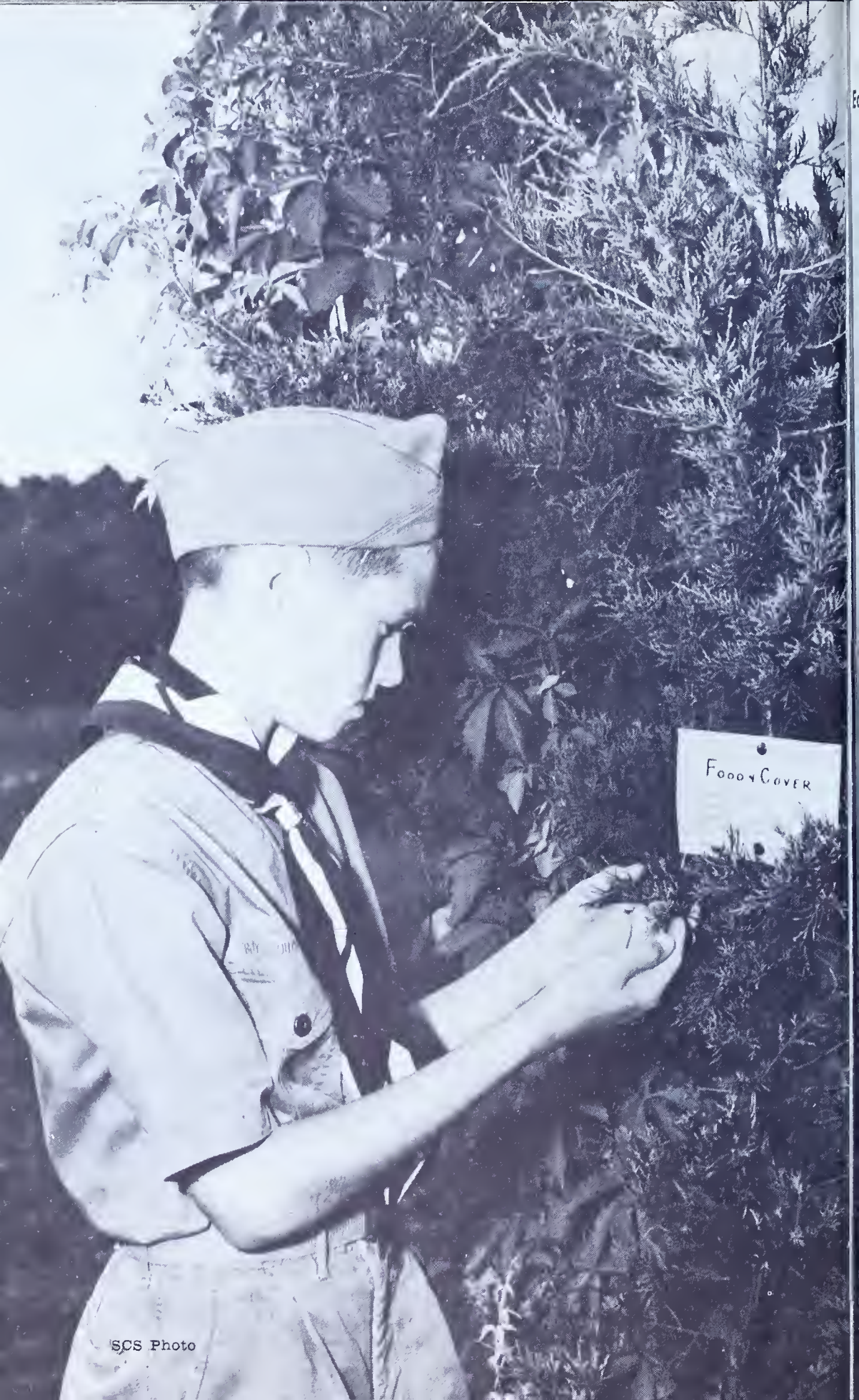
PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



SCS Photo

Salute to Scouting

FOLLOWING the trail left by famous scouts of the past, the Boy Scouts of America have always pioneered in exploring and captivating the imagination of young minds. Like such men as Kit Carson, Davey Crockett, and Buffalo Bill, modern day scouts have ranged far ahead in civilization's march towards good citizenship, honor among men, and proper duty to God and country.

Behind the elaborate ceremonials, bright-colored badges, and exciting stunts, there has been a sincerity of purpose, a skill in organization, and a plan for character building that has produced many of America's finest sons. No other youth organization has so actively interested the great men of our times. From kings to cowboys, presidents to paupers, Scouting has meant many good things to many people.



But no program ever undertaken by the Boy Scouts of America will mean so much to so many as the Conservation Good Turn which they start during National Wildlife Week, March 21-27. Not only will this year-long effort help millions of American boys to develop the right kind of attitudes regarding the importance of natural resources, but in doing their good turns for conservation, Cub Scouts, Boy Scouts and Explorers will be actually contributing to the rebuilding and wise use of our soils, waters, forests and wildlife by down-to-earth work projects.

Never characterized by passiveness, indifference, or formality, Scouting is based on active self-expression and the old axiom of "learning by doing." The organized activities of more than three million boys can hardly go unnoticed. For some, the first mental image that comes to mind at the mention of Boy Scouts will be an enthusiastic, uniformed kid collecting wastepaper or tin cans, helping an old woman or young child across a busy street, or performing some other deed of service to his fellow citizen or his country. In 1954, that recollection will probably be one of the same boy planting a tree seedling, building a birdhouse, or taking some other active part in conservation's cause.

Scouting's Conservation Good Turn should and will have a far reaching effect in the crusade to conserve America's natural wealth. With proper leadership, full cooperation from sportsmen and professional conservationists, and whole-hearted support from every organization interested in the outdoors and a better America, the Boy Scouts will do their best—for God and country, for conservation, and for themselves.

JOIN WITH THE BOY SCOUTS OF AMERICA TO PREVENT FOREST FIRES AND CONSERVE SOIL, WATER, FORESTS, GRASS AND WILDLIFE!





The Otter
Pennsylvania's Rarest Furbearer

By Dr. Earl L. Poole

WITH a price on its rich and durable pelt, and the unwarranted curse of many a fisherman on its sleek, bullet-shaped head, the otter has indeed had a rough time at the hand of man. At one time uniformly distributed throughout the Commonwealth, excessive trapping and persecution have driven it to its last refuge in a comparatively limited area in the northeastern lake section of Pike, Monroe and Wayne Counties. Occasional stragglers wander along the stretches of the Susquehanna and its affluents, and into the upper Delaware, as well as elsewhere in the State, although it is considered rare in these waters, and there are many miles of good otter streams where otters have not been seen for many years.

Excessive trapping and the pollution of many of our creeks and rivers have played an important part in the elimination of the otter from the greater part of the State, until it is now practically confined to the small area just described.

There are apparently a few overland trails that are still occasionally used outside of the area, such as one along the Mehoopany Creek and thence down the Loyalsock to the west branch of the Susquehanna, and in recent years, at least, along the Upper Lehigh River, but otters are known to be great explorers and travelers, and an occasional one may appear at some distance from the center of dispersal. I have heard of recent reports from McKean, Elk, Snyder, Columbia and York Counties, but these were in all probability mostly transients. Because of this tendency to wander, one may get the impression that there are more otters

n the state than is actually the case. They have been known to travel six miles in a night, and may cover fifty or sixty miles in the course of a season. In crossing from one watershed to another, they often journey overland for a distance of several miles, a feat that is much easier in winter than in summer, as their method of progression, especially on an incline, is by means of a few bounds, followed by a slide—a means of locomotion at which they are adept. This habit of sliding is one of the otter's chief sources of amusement, especially when a family group is disporting itself. If no ice or snow is available, a clay or mud bank will do almost as well; and some slides have apparently been used by several generations of otters.

Another characteristic otter trait is the habit of landing at certain established places to dry themselves, wallow and void. These places are often several feet from the water's edge on rather high ground, but they are apparently the recognized social centers of any otters that may pass that way. Sometimes the bleached-out excrement, consisting of fish scales, bones and crayfish shells may form heaps of considerable size and has a characteristic fishy odor.

The home den, in which the young are raised, may be the enlarged, abandoned burrow of some other animal, like the muskrat, woodchuck or beaver, or even the deserted log-lodge of the latter animal. In some cases the young are born in woodchuck burrows several hundred yards away from the nearest water, or in hollow logs, cavities under the roots of trees, in brush piles, or in grass or rush nests in a marsh.

Otters are sexually mature when they are two years old and, according to Emil Liers, who doubtless knows otters more intimately than anyone else, they mate in winter and early spring from December to early April. The two to four young are born from nine months, eighteen days, to twelve months, fifteen days later, also in winter. This apparently long period of gestation also occurs in several related mustelids, notably the marten, fisher, badger and weasel, and is due to delayed implantation of the blastocyst. In captivity otters have been known to mate almost immediately after the cubs are born.

The young are blind, toothless and



helpless for five or six weeks after birth. Their eyes open when they are about thirty-five days old, and they then commence to play among themselves, and with their mother. When ten or twelve weeks old, they are permitted to play outside the nest. Otter cubs must be taught to swim, and the backward ones have to be dragged into the water.

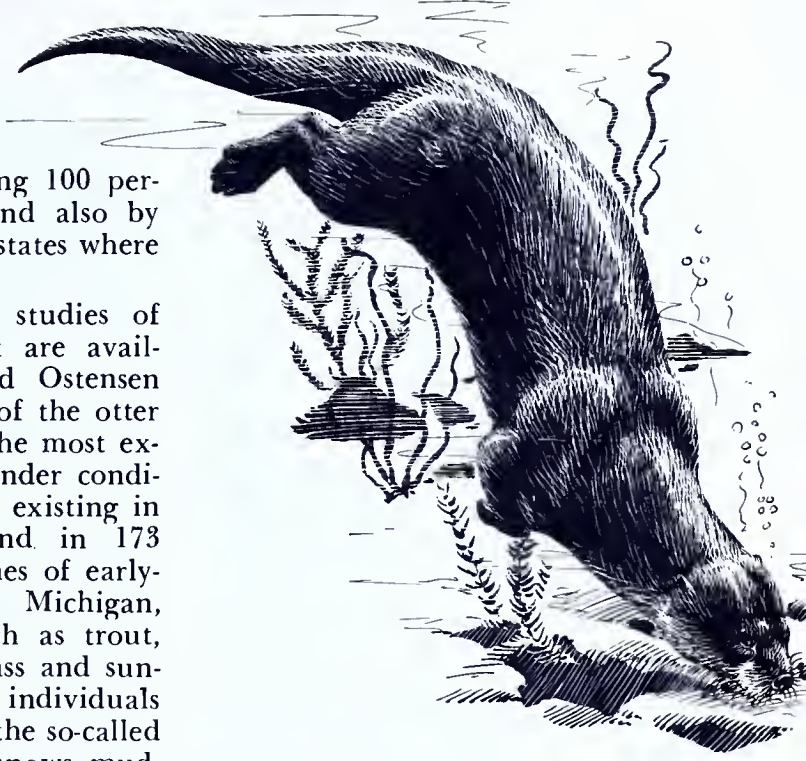
While the mother is generally very solicitous about the off-spring, and will not allow anyone, even the male parent, to come near them until they are six months old, the males are usually kind to the young, and as Mr. Liers says, will assist in their care. He has even had cases in which males have adopted the cubs and caught food for them.

My first and only experience in watching a family of wild otters at play came during a period of relaxation in the midst of the First World War, as I was walking in broad daylight along the reed-bordered stretch of the little river Tille in northeastern France. A series of snorts and the sound of a commotion in the water just beyond the reeds caused me to seek a point where the reeds thinned out enough for me to peep through and see a family of otters; how many, I could not tell, diving and playing with all the abandon of a family of puppies, but with a grace of motion that is probably possessed by no other creature. Perhaps a minute of this, and I pushed the reeds aside to get a better view, when one of the group gave a louder chirp and the entire family disappeared, leaving me with a feeling of having witnessed something that probably very few have ever had the privilege to see, and the war for the moment seemed very unreal and far distant. Since then I have never missed an opportunity, when in otter country, to hunt for their tracks and other signs, but have never had the good fortune to again see a family out in full daylight; for they are almost exclusively nocturnal, and when seen at all it is usually at dusk or in the very early morning.

Until recently little was actually known about the otter's food preferences or of its place in nature's economy. It was generally believed that it was an inveterate destroyer of trout and other game fish, while in muskrat marshes the trapper complained that it killed the muskrats, and the story has been generally circulated that it kills the beaver's young and otherwise annoys them. As a matter of fact, recent studies of the otters' food, made by means of analyses of digestive tracts and scats, indicate that the bulk of its food is made up of much humbler food, gathered by dint of grubbing in the mud at the bottom of streams and lakes, as all who have actually *observed* the otter feeding seem to agree.

When actually pursuing fish, however, they often approach them by stealth, and with barely perceptible motion, hoping to take them unawares and depending on a last quick rush to overtake the intended victim. Naturally the more sluggish or less wary species are captured more easily and more often than those that are swifter and more alert. Although it has been stated that otters eat fish head first, on several occasions I have come upon the remains of bullheads that had obviously been killed and eaten from the tail forward, leaving the head, back to the pectoral fins untouched, and have noticed that the otters in captivity invariably eat their fish *tail* first.

Liers writes that in Minnesota "it eats crayfish, frogs, turtles (particularly the softshell species), the larvae of aquatic insects, angleworms and fish. One of the choicest morsels is crayfish, and where they are abundant an otter will consume a tremendous number in a year's time." His statement is borne out by Alvin Cahn who wrote that "on the shore of Rice Lake, (Minnesota) five old otter



signs were found, all being 100 percent crayfish remains," and also by careful observers in other states where crayfish abound.

Of the two extensive studies of otter feeding habits that are available, that of Lagler and Ostensen on the early spring food of the otter in Michigan, is perhaps the most exhaustive and was made under conditions comparable to those existing in Pennsylvania. They found in 173 stomachs and 220 intestines of early-spring-taken otters in Michigan, game and pan fish, (such as trout, bullheads, pike, perch, bass and sunfish) to the number of 415 individuals had been eaten; while of the so-called "forage fish" (suckers, minnows, mudminnows, muddlers, etc.) 1,112 individuals occurred. The balance of items included 85 frogs, 229 crayfish, and a miscellaneous assortment of mudpuppies, insects and some vertebrates, most of the latter having been eaten as carrion. Their comment that "the most important single fish species in the food examined was the mudminnow," and, "The high incidence and numbers in which these fish occurred suggest that otters grub in the mud which is the special environment of the mudminnow in the spring," further bears out the observations of Mr. Liers and others regarding the feeding habits of the otter.

Kenneth Wilson, who has made an extensive study of winter otter food habits in the coastal region of northeastern North Carolina, where conditions are naturally quite different from those in our area, and fish more abundant and more easily obtained, found that fish occurred in 91 percent of the 24 alimentary tracts and 61 scats examined, while crustaceans, crayfish, blue crabs, decapods and shrimps were found in 39 percent. Water beetles (possibly eaten by fish) were found in five droppings. Three birds (possibly carrion), five frogs, one clam, and the hair of one muskrat made up the residue. Mr. Wilson's chief interest in his study was to determine the role of otters as muskrat predators because of the complaints of trappers that otters were eating or driving off the muskrats. What he actually found was that it was not the otters that were responsible for the reduction in the muskrat population, but the abundant raccoons that were breaking into the nests and eating the young.

Apparently little attention has been paid to otter feeding habits in Pennsylvania. What scattered information I have been able to obtain is largely from casual examinations of otter signs, although these, together with my own efforts in this state and in the eastern shore country of Maryland State over the past fifteen years seem to indicate that the feeding pattern resembles that of Michigan otters as reported by Lagler and Ostenson.

Here, as elsewhere, the crayfish appears to be the most abundant single item, with catfish, chubs, fallfish and miscellaneous "minnows" outweighing all others, although in the neigh-

borhood of crowded trout ponds, remains of several very small trout, both brook and brown, were found. In some localities, and under certain conditions small frogs are eaten, and I have definite proof that otters join the muskrats and raccoons in dining on the common fresh-water mussels, although, of course, chances of finding any such evidence are very slight, since the entire animal is digested. The occurrence of miscellaneous fragments of insects and caddis fly larvae may be due to these items having originally served as fish food.

To sum up the evidence at hand, practically all of the qualified research workers who have taken the pains to ascertain the otters' food habits, have stated definitely that it appears to be neutral or definitely beneficial, as far as its relationship with trout and other game fish is concerned. Such is the opinion expressed by William J. Hamilton, who has had considerable experience with otter in Pike County, as well as in New York State.

Mr. Jay Gilford, who has interested himself in the otter in its last Pennsylvanian stronghold, recently wrote me that "Any *game* fish that I have observed or believed otters to be responsible for catching, were trout, and they had that same day been stocked from a fish hatchery"—also—"I have examined many scats in the past ten or twelve years in northeastern Pennsylvania . . . I believe that a large percentage of the otters' diet consists of bullheads, catfish, shiners and chubs.

It is now pretty generally known among biologists that the various large members of the minnow tribe, like the chub and fall fish, compete with the trout for the food supply, and as Francis Trembly put it, "They also eat trout eggs whenever they get a chance. In normal waters subject to sufficient predation, this does no harm because predators catch the chub and fall fish much more readily than they do the brook trout. Man supplants natural predation with artificial and highly selective predation in which he catches one or a few species, in this case the brook trout, and does not pay much attention to the others, so that with the removal of the predators you will catch a few more trout but they will be of a smaller size, some of them probably stunted." It should also be mentioned in this connection that the otter, of all the predators, is the most restless and wide-ranging, so that its predation is usually scattered over a wide area.

The better informed fisherman are coming to realize that there are many waters in this area that are overstocked with stunted fish which cannot grow simply because of overcompetition for the available food supply. These streams need *more* depredation than they are getting at present in order to reduce the number, but increase the size of the fish.

As for its relationship with the beaver, I cannot take seriously old woodmen's tales of otter annoying the beaver. I know of one place in our state where both animals within recent years lived together in peace and mutual respect, and have heard of others. Occasional conflicts may occur, but no otter in its right mind would willfully provoke the ire of a tough old beaver.

The otter is known as a terrific fighter when brought to bay or in a trap. It has been known to crush a dog's leg bone in its jaws. One veteran otter trapper told me of the many otters that had fought their way out of his traps. He stated that he had five out of six tear themselves out of large double-spring traps in one night, and from the condition of most trapped otters' teeth, this is easy to believe.

On the other hand, in perhaps no other animal is the play instinct so strongly developed. In all their

activities they seem to radiate a spirit of rollicking good nature, whether playing at sliding, swimming in gracefully undulating course through the water, hunting food, or in otherwise routine activities that other creatures would take seriously.

As one small boy said after seeing the marvelous otter sequences in the film *Prowlers of the Everglades,* "They sure have fun." Naturally, when taken young, they make delightful pets.

It would be difficult to leave the subject of otters without recalling Ernest Thompson Seton's worthy eulogy, "Of all the beasts whose lives I have tried to tell, there is one that stands forth, the Chevalier Bayard of the wild—without fear and without reproach. That is the otter, the joyful, keen, and fearless otter; mild and loving to his own kind, and gentle with his neighbor of the stream; full of play and gladness in his life, full of courage in his stress; ideal in his home, steadfast in death; the noblest little soul that ever went four-footed through the woods." Surely no better tribute could be paid to any man or beast.

. . . *The End*

For the BIGGEST SURPRISE
in GAME NEWS history
Watch
The April Issue



Deadline for Wildlife

All photos by Lou Farris



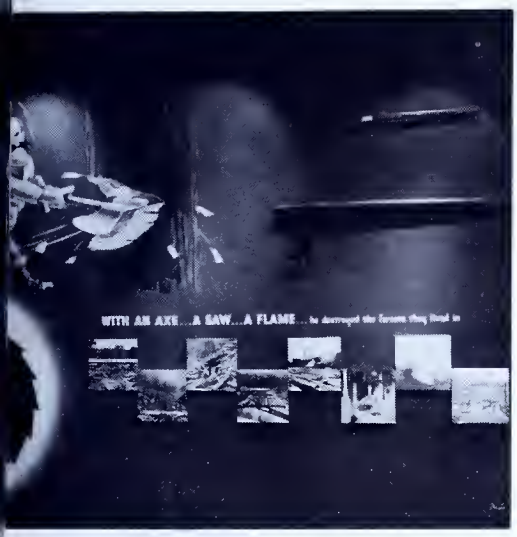
PRIMEVAL PENNSYLVANIA contained a maximum of 15,000 Indians. Their primitive economy and sparse population hardly made a dent in the state's natural resources.



THEN CAME THE WHITE MAN who often made war on the Indians but always warred on wildlife. Buffalo were hunted for hides, ducks for meat, pigeons for sport. The sky was the limit and wholesale slaughter was the result.



YEAR BY YEAR HIS TRIBE INCREASED till it spread all over the map. Your share of Pennsylvania in 1800 was 49.2 acres; in 1950—2.8 acres.



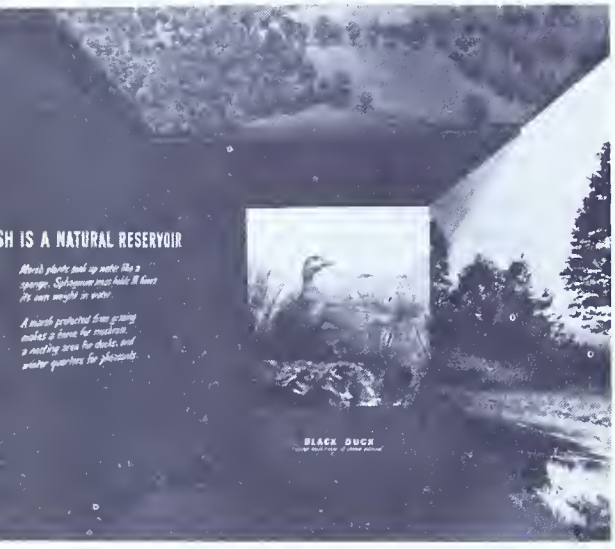
WITH AN AXE . . . A SAW . . . A FLAME . . . he destroyed the forests in which wildlife lived.

WITH A GUN he slaughtered wild birds and animals wholesale.





UNTIL NINE NATIVE SPECIES completely disappeared from Pennsylvania . . . the wolf (1890), the wolverine (1863), elk (1875), mountain lion (1871), marten (1903), bison (1801), passenger pigeon (1906), chestnut (1930), and eskimo curlew (1925).







THE fascinating exhibit portrayed here has captivated the imagination of Pennsylvanians, both young and old, by the thousands since its grand opening at Carnegie Museum, Pittsburgh, last October.

For a long time museums have been bringing the outdoors indoors in stationary habitat groups. Now, nature in action—200 gallons of water per minute tumbling down over cement rocks shadowed by wax foliage into a stream and pool harboring live fish—has been transplanted bodily onto the venerable marble floor of an exhibit gallery.

This beautiful and authentic exhibit dramatizes the story of wildlife conservation in Pennsylvania, from the coming of the white man down to the present day. In subject matter, the sequence is: obituary; Pennsylvania before Penn; the white man's exploitation of nature; the period of management research and experiment; farm management; forest management; and recreation.

The idea behind the exhibit is that wildlife is a crop grown on well-managed farm and forest lands. Instead of competing for space, civilization and wildlife thrive on the same land when that land is wisely used. An implied tribute is paid to the enlightened farmer and forester, while the city-dweller who takes to the tall timber for recreation is reminded of his obligation to keep it clean and unspoiled for those who follow.

Although largest and liveliest, the waterfall is not the only spectacular item in the show. Three-dimensional displays include mounted specimens of extinct animals, as well as the weapons and tools which drove the less fortunate species into oblivion. Real trees, with and without fabricated leaves, appear at several points —the waterfall, the forest, and the "obituary" section that opens the show. Painted dioramas, conservation

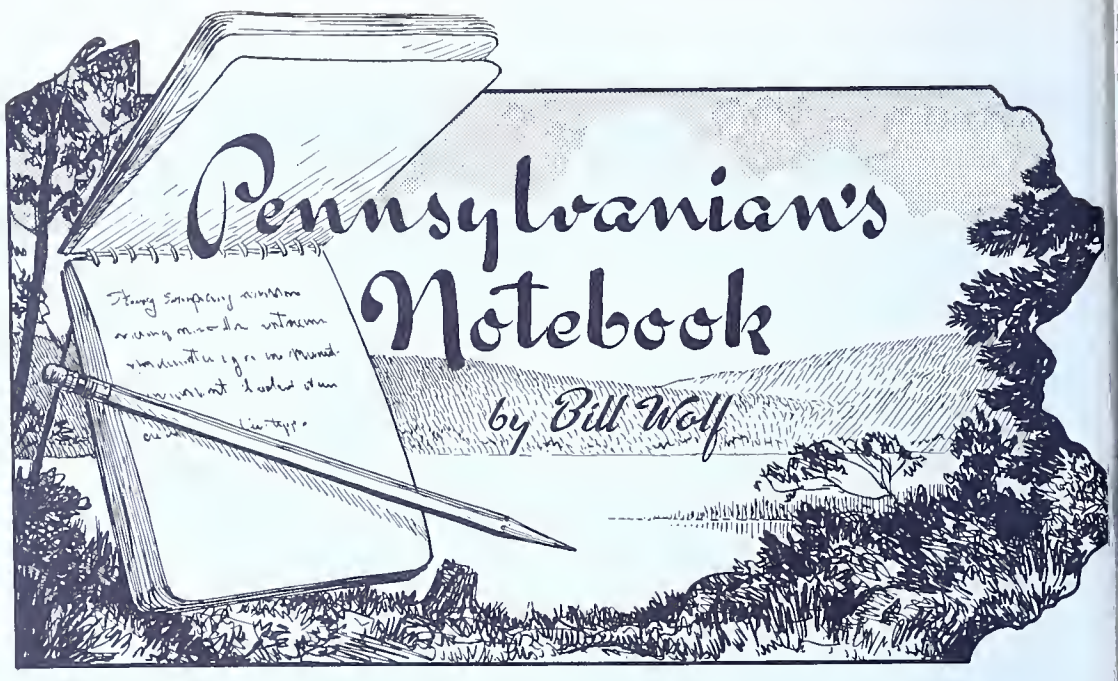


lessons in cartoon form, and photographic blow-ups are used as supporting material throughout.

Financed jointly by Carnegie Museum and the Pennsylvania Game Commission, DEADLINE FOR WILDLIFE was planned by Museum conservationists and designed by James W. Lindsay, under the general supervision of Acting Director M. Graham Netting. In recent years so many outsiders have taken part in the creation of Carnegie Museum shows that "everybody gets into the act" is almost a foregone conclusion, but this exhibit sets a new record. Individuals and organizations from Pittsburgh to New York City have furnished specimens and photographs. The artificial forest containing more than 20,000 wax leaves was produced by volunteers, chiefly high school girls, under the direction of Preparator Hanne F. von Furhrer. Three tons of real stone were furnished by State foresters from Laurel Mountain.

DEADLINE FOR WILDLIFE will be on display for at least one year to allow for extensive use by the general public. Guided tours by Carnegie Institute's Division of Education may be arranged for school classes. The Museum is open from 10:00 a. m. to 5:00 p. m. daily, except on Tuesdays when the hours are 10:00 a. m. to 10:00 p. m. and Sundays from 2:00 p. m. to 5:00 p. m. As always, admission is free at all times.

Although this splendid exhibit should be seen to be fully appreciated, for those who find it impossible to visit Carnegie Museum, the entire story is published in booklet form. It can be secured by sending 25 cents (no stamps) to Carnegie Museum, Department of the Carnegie Institute, Pittsburgh 13, Pennsylvania.



WHEN I was in my very early teens, we lived in the Conewago Hills of York County. Our farm was situated between two hills with the house in the hollow, and the fields in the valley, spreading up the slopes on either side. A favorite walk of mine was up one of the slopes, and down through a wooded and rocky glen which, with rather boyish imagination, I called the Valley of the Rocks.

There were big and old trees in that hollow, and many boulders, somewhat like those on French Creek at St. Peter, Pa., near Phoenixville, although on a smaller scale. Beneath the boulders, which were covered in part by leaves, limbs, earth and mulch, a stream could be heard running. This stream emerged and joined another run at the base of the hill. Nearby, too, was a spring with delicious cold water.

It was fun to climb through the heat of summer to the woods, and then walk down that cool and shaded glen, to hear the water underfoot, to reach the old dirt road at the bottom and pause there under the cover of the ancient trees, to drink from the spring and just idle. Nearby was a stand of longneedled pine with a spongy floor that seemed a foot thick and soft as the finest carpet. The small run provided me with some fishing, and I even caught eels in it on a setline.

Well, it isn't there any more. At least, it wasn't the last time I saw it, and I have never had heart enough to go back again.

We moved from the hills back to York, where I worked on *The Gazette Daily*. Sometimes, on a free day, or after work was done at night, we would drive out to the Conewagos and visit my valley, having lunch beside the spring, or sleeping on hot nights on the pine carpet. Then I left York county, and didn't return to this particular section until after I had married and had two children. I wanted the children to see what I had always considered one of the beauty spots of my boyhood, so, when they were big enough, I drove up from Philadelphia and took them out to the Conewago Hills.

The dirt road was the same, where it turned off the Bull Road, the hills looked much the same. Then we came to the slope down which the road plunged to "my" valley.

The change was startling. There were no more trees anywhere. There

were stumps where they had been cut close to the ground, but the whole hollow and the ascending hill were bare of foilage, so dry and burned out by the sun (that once seldom touched the forest floor) that even brush had not started to grow. Gone were the fern fronds that formerly flourished under the big trees' shade. Even the boulders up my Valley of the Rocks were partly bare, since most of the mosses and lichens that used to grow on their cool tops and flanks couldn't survive the sudden effect of blazing sun when the forest was cut and the boulders turned steaming hot. The run that once trickled beneath the boulders was silent.

As for the spring, it had vanished. The whole watershed had been denuded and dried out. I have never had a more dramatic example of the effects of unwise timbering. Some lumber company had moved in, and levelled the hillside and the valley, drying up the water, leaving nothing for the future. The same thing has happened over many thousands of acres in Pennsylvania, but this was quite real to me because I had liked the place so much. If only a few of the old trees and some of the more promising young ones had been left —but only a drab and cheerless barren remained. I have never gone back.

Conewago Country

THAT name, Conewago, by the way, is often met with through the east and Canada under a variety of spellings. In Pennsylvania, it is the name of a creek which flows into the Susquehanna in York county, and of the hills near the creek. I have come across it as a place name in Ontario, and it is the name of a tribe of Indians who once occupied part of Vermont—the Caughnawaga. Which reminds me of a curious thing I came across recently in Louisiana. Down there, the American lotus—which is a large water lily—is sometimes called the *yonkapin,* its old Indian name. This is practically the same as the *chinquapin,* once so familiar to Pennsylvania; but our chinquapin was of the chestnut family. The two Indian names have a common foundation, however, because the Louisiana water lily known as the yonkapin bears edible brown nuts, just as our chinquapin used to have tiny edible chestnut-like nuts. The chestnut blight killed the chinquapins, of course.

Lost Soil

IT was an odd feeling to walk about in southern Louisiana at the very end of the Mississippi River, and to realize that I very easily could be treading on Pennsylvania soil. The entire lower end of Louisiana has been built up—and is still being built up daily—by silt carried down to it from some two-thirds of the nation. The Mississippi and Missouri rivers collect some of the country's best earth and dump it into the Gulf of Mexico. Some of it undoubtedly comes from western Pennsylvania, where the small streams and the rivers flow into the Ohio, which, in turn, enters the Mississippi.


CHINQUAPIN



Thus, some landowner living on the western watershed of Pennsylvania's mountains no doubt was an unwitting contributor to the rich soil of Louisiana on which I walked. I don't know of any more dramatic realization of the costly effects of soil erosion. I have nothing against the residents of Louisiana, but see no reason why they should live "high on the hawg" because Pennsylvanians, among others, are donating free ground to them every day in the flood that pours its yellow waters into the Gulf. An estimated 600,000,000 tons of valuable dirt is dumped at Louisiana's back door every year.

Soil erosion undoubtedly is one of the most serious conservation problems facing Pennsylvania and many other states. The soil washed from the surface isn't really "lost," in one sense of the word. It does flow to some delta country like Louisiana, or the Chesapeake Bay, to take an example closer to home. There it nourishes life in many forms—the alluvial soil creates fine farmland, the rich sediment carried into the bays makes the tiny forms of life flourish, and on these tiny forms the clams, crabs, shrimp, fish and all aquatic life thrive. However, it is "lost" to the land that produced it, so every time a Pennsylvania stream flows yellow or red with the soil of the Keystone State, you know that we are giving something for nothing to the Mississippi Delta, Chesapeake or Delaware Bays.

All the streams that flow into the Susquehanna, from New York State right on down through Pennsylvania clear to the Octoraro, help carry a burden of fine soil to the Chesapeake Bay country. Some comes from New York and more from Maryland, but the bulk derives from Pennsylvania. From the most fertile part of Pennsylvania, it might be added. Thus we are contributing greatly to the economy of the Chesapeake Bay folk. They are fine people, and I like them immensely, *but* the erosion that helps support them robs Pennsylvania.

"Poisonous" Pennsylvanian

THIS could be a mistaken impression, but isn't the ugly hellbender sort of vanishing from Pennsylvania's wildlife scene? It seems I used to see them with some degree of frequency when younger, but I haven't encountered one along a stream for many, many years. Perhaps this is because I fish different streams now than in my youth.

I shared with most kids the common, and mistaken, idea that this largest and most horrible-looking form of amphibian life in Pennsylvania was poisonous. Human beings are inclined to look with suspicion upon anything that is downright ugly, especially if it crawls, and the hellbender is both ugly and crawls. Although it is voracious in its appetite for crawfish and whatever it can find on stream bottoms, it is harmless where human beings are concerned, and not only isn't poisonous, but some authorities say its flesh is good to eat. I doubt whether many persons have ever tried it as food, since its flabby skin and general rep-

tilian appearance aren't especially appetizing.

I have never seen one of the somewhat similar mud puppies, or water dogs, which are sometimes caught by bait fishermen on cloudy days or at night, or are seen exposed on dull days along streams. These are slightly smaller than hellbenders, seldom reaching 18 inches, while the latter may be as much as two feet long. Both are commonly called "lizards," which they aren't, of course. Like the hellbender, water dogs are supposed to be poisonous, which they also aren't.

Another victim of the erroneous belief that its bite is poisonous is the common spotted salamander which is often encountered outdoors in Pennsylvania. This is a pretty amphibian (also incorrectly called a lizard) with bright, round yellow spots on a greenish-brown body so dark that it looks black. We had one that persisted in trying to live in our tent on a camping trip several years ago in the Poconos. They are quite harmless although the moist, glistening bodies inspire dread in the hearts of the uninformed.



Tricks Make Treats

ALTHOUGH I can't say I would relish approaching a hellbender as an article of food, I do believe that much that is edible goes to waste in this state—as well as others—because of foolish food prejudices. I have some myself, and have come across many in others. For instance, a good number of the rabbits that are shot in Pennsylvania are not consumed because many housewives—and particularly those city-bred and city-raised—have some foolish aversion to cooking and eating them. Too many hunters are greeted with: "All right, you brought them home and you can cook them if you want to eat them." The women have no reason for their bias against rabbits. Most have never even tasted them. Some say without reason or experience that they have a "wild taste," whatever that is. Others say they remind them of skinned cats. Still others simply don't want anything to do with them.

Actually, as most hunters know, rabbit is one of the best of wild meats, tasting somewhat like chicken, only better. If there is any bad taste to a rabbit, it has been put there by the cook. Like most game, they are best if treated simply. A bit of parboiling, and then frying them just like chicken will produce a superior dish. The parboiling is necessary only because a thick rabbit leg or back won't cook completely through if it is fried only. Of course, it can be braised in its own gravy.

Upstate, we often had hassenpfeffer, which is just rabbit marinated for a couple of days before it is braised in a bit of the marinade that gives it a tangy, slightly sour taste. We also occasionally had jugged hare. These were just variations of the same theme—which is, that rabbit in any form is excellent eating.



Squirrels suffer from even greater prejudice, and this is entirely beyond me. If there is any dish from game better than squirrel potpie, or a stew, I don't know what it is. Both squirrels and rabbits are "clean eaters," living on vegetation in the case of rabbits, and on nuts or edible kernels or grains in the case of squirrels. Compared to chickens and hogs, they are models of cleanliness in their food habits. For the same reason, all vegetable eaters like muskrats should be on a preferred eating list, but they certainly aren't.

Pennsylvania has a population of greatly varied antecedents, more so than most states. I am not referring to city populations which, in a metropolis like New York, might include almost every race under the sun; but to the backbone of the state, the men and women who live in the smaller cities, towns, villages and in the country. Among these many peoples, those of German and Middle Europe descent show a fine appreciation for game as a table food. They know its worth and how to cook it. This cooking can be found in the mining and agricultural sections of Pennsylvania, as well as in the towns nearby.

However, Italians and Negroes show greater imagination and daring in their use of wildlife as food than any other peoples. They profit most from the fresh "greens" that come up in the spring, cutting dandelion and poke shoots to make into salads. They take the most ordinary fish and turn them into good dishes. They will eat almost anything that walks, swims or flies. I have some good Italian friends who will make use of every crow I can bring home. The only time I ever saw one stopped was when he went hunting for the first time, and, proudly but illegally, brought home an odd bird which he had shot. He cleaned and plucked it, and put in the refrigerator, but it sort of smelled up the icebox so he was going to throw it out when he thought of asking just what it was he had killed. Examination of the remains, and the discarded feathers, told me he was trying to eat a bittern. He thought it was some kind of duck.

Negroes greatly enjoy 'possum, raccoon and "marsh rabbit." There is such a thing as a swamp rabbit, of course, but the marsh rabbit for sale in our larger cities is muskrat. There is nothing wrong with muskrat for the table, except that careless trappers who don't tend their lines regularly skin and prepare for the market muskrats that have been dead for some time. This doesn't improve the quality of the flesh. You must know the trapper to enjoy muskrat.

I'm not greatly in favor of the method often employed to induce squeamish persons to eat strange meats—telling them that it is something else. Once, however, I did induce a lady to eat heartily of a venison stew by telling her I had included some beef especially because she didn't like venison, and I carefully picked out the "beef" for her plate at the table. There was no beef, of course.

. . . The End

The Road to Conservation

OVER TIOGA COUNTY'S ROLLING HILLS

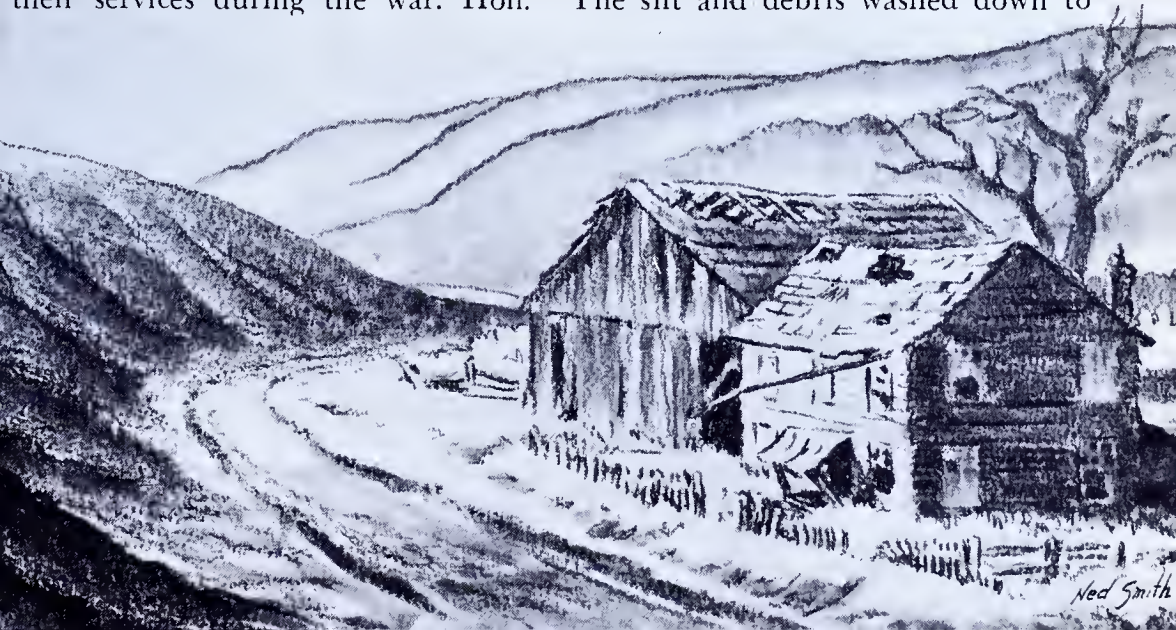
By Ivan McKeever

OVER Tioga County's rolling hills we find some of the most beautiful scenery to be found anywhere. Most travelers agree that the canyon country of Tioga County is unsurpassed in scenic beauty. This thought is confirmed by those who rush to the Laurel Festival held at Wellsboro and vicinity annually late in June. Then again, in early fall, we find people from far and wide journeying here when autumn colors set the countryside aglow.

While it is true that Tioga County is famous for its scenery, the early pioneers discovered that you cannot live on scenery alone. They set to work to clear the land, and farming became the main enterprise.

Many of the original settlers in Tioga County were from New England. There were claims by the various colonies along the Atlantic seaboard for all the land due west. Connecticut claimed the northern tier section of Pennsylvania. A number of the early settlers in Tioga County were Revolutionary War heroes who were paid with land for their services during the war. Hon. Samuel Baker, Revolutionary War soldier, was the first white settler in 1787. Within a few months of his arrival, Mr. Baker was joined by Amos Stone who had served as a captain in the Connecticut Line during the war.

These early settlers found Tioga County heavily wooded. The soils were glaciated soils, that is, they were influenced by the glaciers of ages ago. The topsoils were never too deep, but under the forest cover they became very rich and organic in nature. They were therefore able to absorb water very rapidly. The subsoil seemed to be tight, making it difficult for water to soak deep into the soil. This soil condition resulted in excessive runoff after the topsoil had become saturated. When the trees were cut from the slopes and square farming was practiced, the topsoil washed away rapidly leading to many of the problems of soil erosion on the slopes as well as in the valleys throughout the entire county. As the sloping fields lost the topsoil, erosion was accelerated. The silt and debris washed down to





SCS Photo

A 1953 erosion scene in Tioga County. A newly seeded field of oats seriously gullied by one rain, located along Route 6 between Wellsboro and Mansfield.

clog the streams, thus seriously damaging the fertile bottom fields.

This trend continued until many originally productive farms in Tioga County were abandoned. I have visited sections of Tioga County with local farmers who have pointed out grownup areas where there were once profitable farms. In one case, a resident of Tioga County showed me the place where he was born and reared. The house was vacant and in bad condition. There was no longer a barn or other buildings. The adjoining slopes were either grown up to woods or were partially grown up with brush, briars and weeds. What happened to this farm also happened to many other farms—CONCRETE EVIDENCE THAT LAND USE PRACTICES OF THE PAST WERE NOT SUFFICIENT FOR PERMANENT AGRICULTURE!

Riding along the Cowanesque River today, we see ample evidence of a past agricultural prosperity. Many empty tobacco sheds supply evidence that this little valley was once an important tobacco producing area. In fact, just a few years ago acres and acres of tobacco were produced on the fertile farm lands along the Cowanesque River. In our discussions with many folks in Tioga County, we learn that in many ways Cowanesque Valley was once a more prosperous farming neighborhood than it is today.

Flooding is now a periodic event. One farmer stated: "The valley floods each year, leaving litter all over the bottom." Dikes constructed to protect the bottom lands are seriously damaged with each flood. Another farmer pointed out: "I can remember when we never had to worry about floods."

Another example worthy of consideration, in our analysis of what has happened, is Marsh Creek. Marsh Creek Valley was once a beautiful and profitable farming community. Celery was produced as cash crop and was shipped to market, not by the carload but by the trainload. Today we see just another example of the results of improper land use. The denuded slopes of the valley poured silt and debris into the channel. This situation caused clogging of the stream, raising of the stream bed and

the destroying of the fertile farm land in the valley. Within a relatively short time many farm families along Marsh Creek were seriously affected economically due to this misuse of the land in the watershed. Remember too that the greater part of the change in this valley has occurred during the last twenty years!

Other examples could be given, but the two I have mentioned should suffice to illustrate to everyone the importance of the conservation movement. When we speak of everyone we mean the people living in the cities and in the towns as well as those living on the farms. They should all be interested in whether or not the rich valley lands of Tioga County and all the other good farm lands are retained in a high state of production. Certainly the loss of Marsh Creek Valley in celery production and the loss of the Cowanesque Valley as an important tobacco producing area are not in the best interest of business in general in Tioga County or in Pennsylvania.

Tioga County is representative of all Pennsylvania's northern tier country. The soil, the timber, the land use pattern, the erosion, the land decline, and the flood problems are also typical of other counties of northern Pennsylvania.

Conservation activity in Tioga County has been influenced by national and state concern because the same sort of destruction which has been witnessed here was prevalent throughout the country. For many years leading farmers and others realized what was happening to the good lands of their county. They decided that something should be done to stop the rapid loss of their remaining topsoil. At the same time, these leaders realized that you cannot have conservation by wishful thinking. Their consideration for their problems led to the conclusion that *The Road to Conservation* should be built upon local control, sound thinking, thorough planning and proper coordination of all those interested in conservation activities. It was this thinking regarding their needs that led to the establishment of the Tioga County Soil Conservation District over six years ago. The

SCS Photo

Marsh Creek at flood stage. A common spring and summer scene in these flooded fields where excellent celery was once produced in abundance.





SCS Photo

District directors and representatives of cooperating agencies plan their 1954 program. Seated, left to right: Secretary Franklin Nichols, Wellsboro; District Director Robert Miller, Knoxville; Herbert Kaufman, Pa. Dept. of Highways, Harrisburg; R. P. Tipple, Pa. Dept. of Highways, Tioga County; Victor Hurd, county commissioner—district director, Millerton; Oscar Kimmel, State Soil Conservation Commission. Standing: Floyd Webster, district director; Burton Owens, district director; Charles Slaton, Soil Conservation Service; Walter Ludwig, Pa. Dept. of Forests & Waters; Leland E. Cloos, Pa. Fish Commission; Stanley Hamilton, district chairman; and Leslie Wood, Pa. Game Commission.

county commissioners, farm leaders, vocational teachers and others had sound reasoning for wanting to do something about conserving the soils of Tioga County.

The turning point in Tioga County can be traced to that day in October, 1947, when the county commissioners, Bob Lugg, Leon Smith, and Victor Hurd recognizing the seriousness of erosion in their county declared the county a soil conservation district. I suspect that there have been few acts in Tioga County that will have a wider significance than this. I have a feeling that future historians of Tioga County will credit this accomplishment as one of the greatest single actions affecting the welfare and future prosperity of the county. These men deserve great credit and thanks, but it will perhaps rest upon a later generation to fully appreciate and fully credit the people who have helped in spite of difficulties to develop a program designed to conserve the basic resources—the soil, the water, the forests and the wildlife. They recognized what was happening in Tioga County and they also knew it was time to do something about it.

The fact that they were right in their conclusions and decisions is only too well emphasized by the discussions we hear today regarding the construction of great water-holding reservoirs on the upper watershed of the Susquehanna River. What has been happening in Tioga County has been happening on the whole watershed of the beautiful Susquehanna River with flooding becoming more and more of a problem. Army engineers have done a great amount of work with dikes to protect such communities as Williamsport and Sunbury.

I would like to make perfectly clear that I would not for one moment criticize the construction of these great reservoirs because I am not really qualified to pass upon the soundness of this method of flood prevention. I can only say that I am critical of the type of land use and land treatment that has brought us into our present situation with increased serious flooding. There are sound arguments both for and against such structures, but I believe all would agree to the advisability that, even though such structures are needed in great river basin flood

control programs, they will not be successful permanently unless they are supplemented by adequate conservation on the land, draining into the reservoirs.

This draws our attention to the possibilities of flood prevention by the use of a complete and adequate conservation program over all the land. Records indicate that such conservation programs have a tendency to reduce floods. We can consider the idea of pushing our conservation program rapidly in order to develop a program designed to hold the maximum amount of water where it falls. All of us know that, once the water runs off the land and becomes a flood hazard, it is no longer useful for the production of crops, grass, and trees. Also, while we are speculating on the potentials of great reservoirs that will hold billions of gallons of water, we should also speculate on the potentials of the possible flood control aspects of billions of little dams made by plow furrows and tillage implements on the level, each holding a gallon of water.

The Congress of the United States has given recognition to the need for conserving the water back on the little watersheds where it falls. During the closing days of the first session of the present Congress a bill was passed providing for the establishment of approximately fifty small pilot watersheds distributed throughout the country. One has been named for Pennsylvania. It is Corey Creek in Tioga County. Corey Creek is the little stream that flows east along Route 6 and empties into the Tioga River at Mansfield. There are about eighty-five farms in this watershed comprising about 15,000 acres. Here federal, state, local agencies and groups will join hands with the farmers in the development of a program to conserve the water and the soil. The farmers on the Corey Creek Watershed are fortunate in having their watershed selected as the one in Pennsylvania for this work. Upon the success of this program may depend future programs for flood prevention and erosion control.

Great progress has been made toward the conservation of soil and water on the farm lands of Tioga County. The Board of Directors of the Tioga County Soil Conservation District have given much time toward the direction of a sound soil and water conservation program. The district directors have been responsible for the development of an enthusiastic team spirit which has pulled together federal, state, and county agencies into one common conservation program to fit the needs of the farmers of Tioga County. The results speak for themselves.

In the six years since the district became organized, over 800 farmers have become cooperators with their soil conservation district. This means that approximately one-third of all the farms in the county are operated by district cooperators. When we think of what happened previously, we can only marvel at these results. This is evidence too that the farmers of Tioga County like the type of approach to their land problems that is available through cooperation with their soil conservation district.

Other results show over 19,000 acres of strip cropping planned with approximately 6,539 acres already established. Over 43,000 feet of outlets and farm watercourses have been established. More than fifty-five miles diversion terraces have been constructed to protect valuable land from excessive runoff from the slopes above. Drainage terraces have been constructed to drain wetland and make it productive.

The Road to Conservation is not easy, but it is one we should all be willing to travel together. This seems to be the policy that most people in Tioga County are rapidly adopting.



SCS Photo

Diversion terraces pick up excess water and protect valuable land below. Here a diversion is just being started on the farm of Stanley Seymour, Tioga County District cooperator. Shown in the picture is Stanley and his daughter.

We always find in every great movement differences of opinion and those who would hold back or criticize. But once a movement gets under way, whether it is constructive or destructive, it often has a tendency to gather momentum. Such was the case during the period of the destruction of the original natural resources. Such I feel will be the case in the conservation program now being carried out over Tioga County's rolling hills.

While there is a great amount of work yet to be done, the district has covered the most difficult part of the road. The mere fact that over eight hundred farmers in this county are already cooperating is positive evidence that the program has begun to gather momentum. And, I think we can look forward to a time in the not too distant future when a conservation plan will have been developed for EVERY farm in Tioga County. However, to get this total job done will require the combined efforts of everyone in a position to contribute. It cannot be done too rapidly for the good of the farming industry of Tioga County. Everyone concerned should help to see that it does not take forever to get this necessary job finished. Then, as the final land use decisions are made and the remaining needed conservation practices applied, the farmers of Tioga County will be able to say, one to another: "THE SOIL IS TIED DOWN, OUR GOOD TOPSOIL WILL STAY, AND THE PERMANENCY OF OUR AGRICULTURE IS SECURE."

. . . *The End*

NEXT MONTH

The Most Unusual Issue of

THE PENNSYLVANIA GAME NEWS

Ever Published!

FIELD NOTES

Those Poor Old Days

WARREN COUNTY—Several days after the close of the recent deer season the "Warren Mirror" carried a news item release of 1923 that I found quite interesting. At the close of the hunting season 30 years ago, Game Protector Elmer Pilling had released the following game kill figures for Warren County: Legal Male Deer—48, Legal Bears—22. Comparing these figures for the 1923 deer season with the recent 1953 deer season in which I estimated that there were about 1250 legal bucks and antlerless deer together killed in my district of Warren County which comprises that portion of the County east of the Allegheny River. Also during the calender year 1953 we have a record of 137 deer killed on the highways of this district and 14 deer killed for property damage. I wonder which hunting season was the more successful. I can't help but feel that the residents of Warren County were better satisfied with the 1923 season then they were with the one just past. —District Game Protector David R. Titus, Warren.



Deer Dent Damage

SOMERSET COUNTY—One day in December, I stopped in at a business establishment regarding some repair work. There was another customer in the place who registered a damage complaint on deer and confined it to the antlered ones. From his pocket, he took one point of a deer antler about four or five inches long. The following story followed: This man had a truck and hauled mine props. He had gone out for his truck a day or two previous to our meeting and found one of his 12-ply tires flat. When the tire was taken apart for repair this horn was found through the bottom of the tire and out the side. He had no idea where he picked it up.—District Game Protector R. V. Rea, Confluence.

Bring 'Em Back Dead or Alive

GREENE COUNTY—A native of Greene County made his annual trip to the mountains near Emporium to get a buck. He had made 11 unsuccessful attempts and did not take any chances this time. His friends placed him on watch near camp because he was not familiar with that particular area. He was hard to convince that he should stay there, but decided any-



thing would be better than being lost. Luck was with him because in a very short time a nice seven point buck came near him, and he felled it with one shot. The buck struggled and the hunter was going to shoot it again but the rifle jammed so he pulled off his belt, and in some manner tied the animal to a sapling. An effort was then made to stick the deer, but a struggle took place and the knife was lost. Something had to be done quickly so, rather than take any chance of having his prize escape, the hunter used his rifle as a club to add the finishing touch. When the excitement was over the rifle was without a stock and in a somewhat battered condition but our hunter friend was quite happy.—District Game Protector William E. Cowden, Waynesburg.

One Hundred Dollars Worth of Excitement

WASHINGTON COUNTY—During December, I received a call from a trapper. He stated that he and his buddy got the license number from the car of some trap thieves. The trappers also got a good look at the thieves, which helped in positive identification. When the defendants were apprehended, they turned out to be—one high school teacher, two students from the University of Pittsburgh, and the fourth was the brother of the high school teacher. When asked why they did such a thing they said, "just for the excitement in it." One hundred dollars in fines was collected.—District Game Protector G. T. Church, Washington.

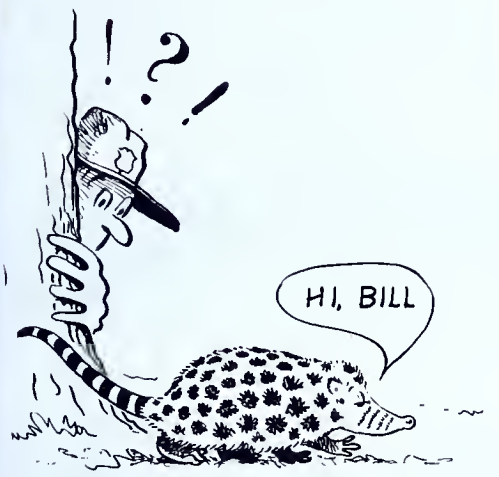
Watch the Crossing

MONROE COUNTY—An elderly couple sitting in a vehicle along Route 390, north of Sky Top, aroused the curiosity of Sky Top's Patrolman, Harry Campbell. He thought they had motor trouble with their car; however, after talking to them they stated they wanted to see a deer for they were parked near a sign which read "Deer Crossing."—District Game Protector John Spencer, Mt. Pocono.

Chickens Come Home to Roost

LAWRENCE COUNTY—During the first day of small game season a covey of about 12 quail came back into the Special Propagation Area No. 3. No doubt they were some reared here this season or summer with the help of jungle fowl. When the shooting became too close the quail and a large number of ringneck pheasants came back to the safety and quiet of the area.—District Game Protector Calvin A. Hooper, New Castle.





Off-Color Animals

MONTGOMERY COUNTY—A very interesting part of the outdoor life is to look at off-colored animals. In a year's time, it is a common thing for a Game Protector to spot such things as a white crow in a flock of black ones or a brown and white deer in a herd of brown ones, but to see the following animals which are considered the off-colored variety all in one month is very unusual. Listed below are the off-colored animals which I saw during the month of December, 1953: A raccoon with a white tail; a doe deer which was colored white and brown; more than a hundred black muskrats instead of the brown variety; ten skunks which were the reddish brown and white instead of the black and white; two white muskrats which were white all over with brown eyes. I also heard of a white skunk which a trapper had caught, but I did not see it.—District Game Protector William E. Shaver, Mainland.

Superstitious Deer

SUSQUEHANNA COUNTY—A hunter named Garis from Great Bend, Pa., was watching four deer during the past buck season. Presently a black cat came walking into view. Whether inquisitive or just plain resentful, Mr. Garis does not know, but whatever the cause two of the deer apparently resented the cat's presence for they ran after and chased the cat up an apple tree. After circling the tree a few times surveying their handiwork, the deer lost interest and wandered away.—District Game Protector Donald G. Day, Susquehanna.

COMING . . .

Next Month

A SPECIAL SURPRISE

Spotlight Surprise

CRAWFORD COUNTY—While returning to headquarters one night during the deer season, I saw four deer against the skyline. I put my spotlight on them and much to my surprise a shot rang out just behind my car. One of the deer staggered and then the four of them took off. All four of the deer were does. I found the man who fired the shot about 50 yards behind the car. When questioned he said at first that he had shot at a fence post, but later admitted he had shot at the deer.—District Game Protector John Putman, Titusville.





Frigid Retrieve

FAYETTE COUNTY—Mr. J. Harold Arnold, a Farm-Game Co-operator on Project No. 146 in Fayette County, related the following incident to me: A duck hunter was hunting ducks on his pond, and was successful in bagging one which came down in the middle of the pond. With no way of reaching it from shore and determined to retrieve his kill, he peeled off his clothes and swam out and got the duck. This was one of the colder days during duck season and he shivered for some time after his experience. Mr. Arnold stated it was hard to turn hunters down from hunting on his farm, when they enjoyed their sport well enough to swim in that icy water to retrieve their game.—Food and Cover Corps Foreman Andrew Ewart.

One In A Million

FRANKLIN COUNTY—While checking antlerless deer hunters I came across one of our million "game Managers" who was more interesting than most. He was dressed in the finest woolen clothes and sported a fine scope-mounted, high powered rifle. He began telling me how the deer seasons should be run and complained about the scarcity of deer. I asked him how he accounted for the unusually high buck kill on a nearby ridge. He replied, "That's easy to account for. The bucks were just used to the season coming in at 9:00 o'clock and when the Game Commission opened it at 7:00 this year, they were fooled and caught on that ridge."—District Game Protector Edward W. Campbell, Fort Loudon.

Juniata River Rest Stop

HUNTINGDON COUNTY—In November just prior to the deer season I observed a whistling swan as it fed in the Juniata River between Huntingdon and Smithfield Boroughs. Several persons took pictures of this great bird from as close as 40 feet. Apparently some unscrupulous hunter had shot this bird as it is still living there in the vicinity of a small grassy island not 200 feet from several houses and the highway. About December 12th it took a practice flight of about 400 yards and landed again at the little island as if to say, "I'm just not up to it yet." This must be the first time many of the local people have seen a wild swan at close range, as many have been heard calling it a snow goose. This swan was still at the same location as of December 23, 1953. I have not seen it since then.—District Game Protector Dean M. Lesnett, Huntingdon.

Marsh Hawk Misses

MIFFLIN COUNTY—On December 5, 1953, while patrolling in Wayne Township, I observed a marsh hawk hunting in a field of fairly good cover. It was quartering the field about 40 feet above the ground, when it started to circle. After making several circles it went into a dive, when almost to the ground, out flew a ringneck cock pheasant. All the hawk got was a few feathers.—District Game Protector Elmer L. Alesander, Belleville.

Federal Aid in Wildlife Restoration, Northeastern Pennsylvania

The following article, second in a series of six, is the result of combined effort and teamwork. Field data and reports were compiled by Nick Ruha, Land Utilization Assistant, and Roy Trexler, Pittman-Robertson Area Leader, Northeast Division. The article was prepared for publication by Division of Land Utilization personnel at Harrisburg. Photos by Commission staff photographers.

AS STATED in a previous article the program of Federal Aid in Wildlife Restoration was inaugurated on July 1, 1938. Under this legislation, known as the Pittman-Robertson Act, Wildlife Research and Restoration Projects are approved in various states, and funds provided to finance seventy-five percent of the costs. (Expenditures for wildlife protection, general departmental administration, propagation and stocking of game are not allowable under terms of the act.) Programs are financed from federal taxes imposed on sale of arms and ammunition. Each state receives a proportionate amount of this fund, dependent upon number of licenses sold and the state acreage compared to the whole of United States.

From 1938 to 1947 receipts from these excise taxes were limited and projects were confined largely to purchase of hunting lands and research problems.

In 1948 the Pennsylvania Cooperative Farm Game Program was expanded and a Pittman-Robertson Project approved to conduct the work. Since 1949 development of State Game Lands has also been partly financed with these monies. All activities receive prior approval and periodic inspection by personnel of the United States Fish and Wildlife Service.

This article is written to acquaint interested sportsmen and conservationists with the use of Federal Aid monies, and the accomplishments in wildlife restoration throughout

Northeastern Pennsylvania, which includes Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne and Wyoming Counties.

Within the northeast field administration division of the Pennsylvania Game Commission is 264,602.94 acres, (slightly more than twenty-nine percent), of the 902,179 total acres of State Game Lands; 152,611 acres (nearly fifteen percent) of the 1,048,145 total acres of Cooperative Farm Game Projects; and 18,912 acres (slightly less than seventeen percent) of the 111,819 total acres of other projects throughout the state.

Federal Aid funds have helped finance the acquisition of many State Game Lands. In the Northeast Division acreage in the various counties were purchased as follows:

County	*Acreage*
Bradford	832.6
Carbon	5,737.1
Lackawanna	1,669.3
Luzerne	11,977.4
Monroe	5,355.9
Northumberland	3,765.6
Pike	6,229.1
Sullivan	2,171.8
Susquehanna	1,840.5
Wayne	95.2
Wyoming	1,957.7
Grand Total	41,632.2

All areas were checked and approved by field men from the Fish and Wildlife Service.

In addition to the acreage noted above the Commission recently made application for $24,448.00 of Federal Aid funds to partly finance the purchase of 3,781.3 acres from the Howlett Estate in Monroe County. Since Fish and Wildlife Service personnel have appraised the tract as being worth considerably more money, the purchase should receive approval.

These and other State Game Lands in the division are primarily wooded and produce excellent deer, bear, wild turkey, squirrel and grouse hunting. Numerous lakes, ponds and beaver dams located on these lands provide local sportsmen with areas on which migratory waterfowl may be flushed and shot during the open season. Open field areas which were cleared on many game lands during recent years have been planted to small grains or seeded to various clovers, thus helping provide the habitat required by wild turkeys. All other forest game species utilize the openings and food furnished through this system of management.

A great number of the smaller game lands contain one or more old farms. Here project personnel, following approved soil conservation principles, planted field crops on a rotation basis, and through development of food and cover for wildlife made the lands productive. Each year more sportsmen are discovering the location of these areas and they are now being hunted quite heavily.

Expansion and development of the Cooperative Farm Game Program, Rabbit Farms and other leased areas have been rapid during the past few years. However, in the northeastern portion of the state, which is primarily forest land, these project areas are limited in number because they had to be confined to the better agricultural counties.

Tables outlining accomplishments on game restoration areas indicate the amount of work and type of lands developed under the Pittman-Robertson Act. The map designates more accurately the locations of these improvements. Food and cover for wildlife was established and improved on practically all lands by planting or purchasing strips of grains and clovers, maintaining nesting sites by periodic grassland improvement, planting evergreen trees and berry or nut producing shrubs, planting aquatic plants and developing additional water area

STATE GAME LANDS
ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
JANUARY 1, 1949 TO DECEMBER 31, 1953

NORTHEAST DIVISION

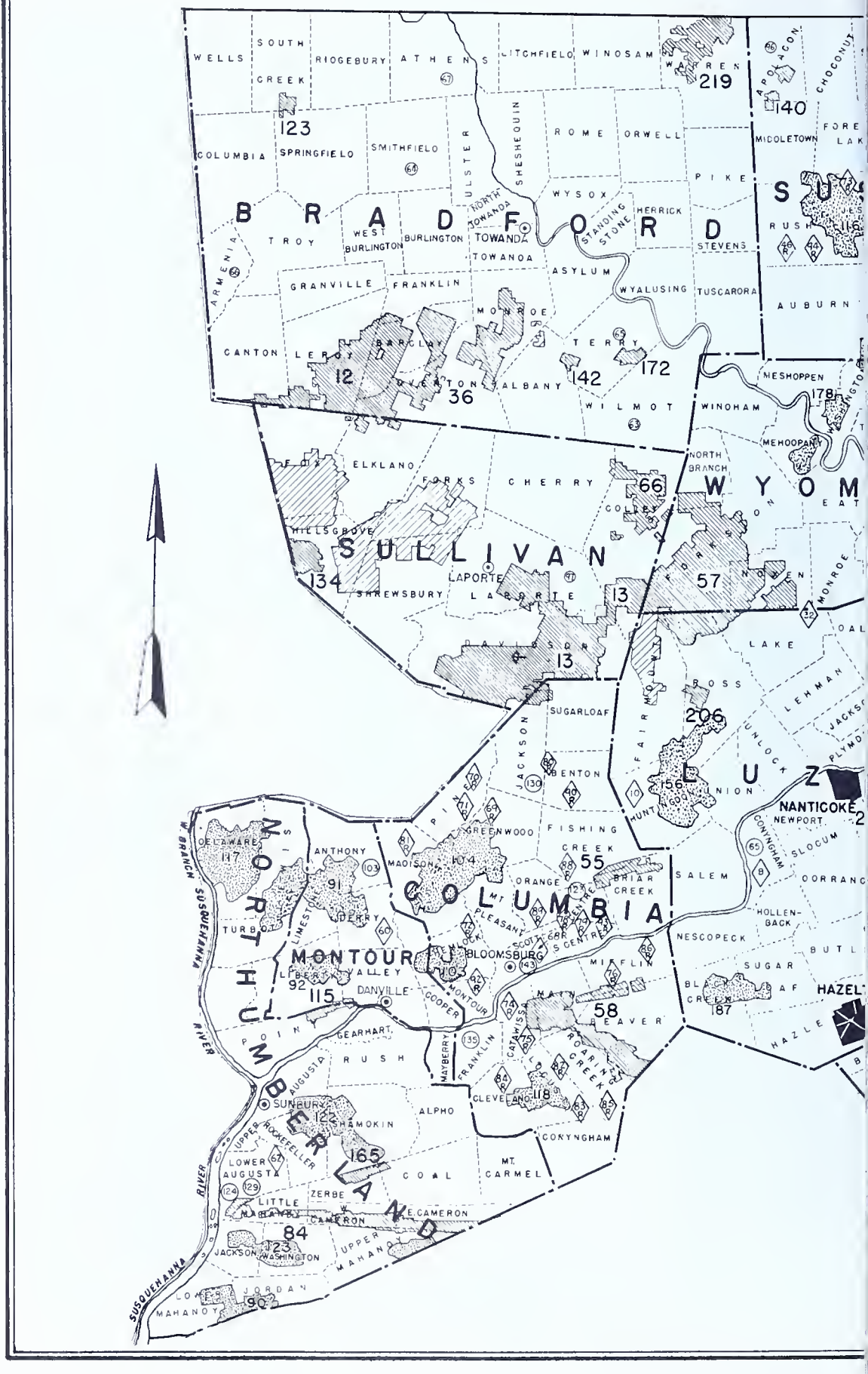
County	Food Strips					Seedlings		Forest Cuttings			Fruit Trees		Waterfowl Management				
								Border-Edge					Potholes Constructed		Ditches Constructed		
	Cleared Acres	Planted to Grains Acres	Seeded to Clovers Acres	Maintained in Sod Acres	Equipment Roads Serviced Miles	Evergreens No.	Others No.	Release Acres	Width * Feet	Length Feet	Released No.	Pruned No.	No.	Acres	*Width-Feet	Length Feet	Aquatic Foods Planted† Acres
Bradford	233.3	376.3	280.5	2,654.0	..	119,300	548,900	158.0	50	44,960	510	1,035	..	..	..	..	..
Carbon	103.0	459.5	337.5	118.0	3.5	8,500	68,470	5.0	50	18,000	182	177	..	..	..	..	..
Columbia	4.0	54.0	20.5	22.0	0.8	750	17,200	36.0	28	4,200	190	44	..	..	..	..	..
Lackawanna	29.0	34.0	31.0	11.0	..	2,000	6,000	34.0	50	38,300	170	85	..	..	..	..	15.0
Luzerne	47.3	118.3	57.7	99.0	2.0	4,500	85,470	3.0	50	48,765	1,850	150	..	..	12	900	28.0
Monroe	113.5	297.3	96.0	251.0	..	9,150	121,735	95.0	40	16,000	305	387	1	0.1	12	1,800	31.0
Montour	8.0	138.7	64.0	184.0	..	2,000	13,000	22.0	40	16,000	45	115	..	..	..	..	..
Northumberland	....	....	....	....	..	....	.....	7.0	40	6,700	350	....	..	..	..	..	..
Pike	31.0	81.3	3.5	84.0	..	4,850	39,290	64.7	105	7,114	859	246	..	..	..	..	51.0
Sullivan	53.0	55.0	57.0	125.0	..	8,000	64,396	166.0	50	6,850	281	226	..	..	..	..	..
Susquehanna	137.0	372.5	120.0	164.0	..	56,750	64,545	26.0	50	32,500	1,062	346	..	..	..	..	14.5
Wayne	71.5	192.5	54.7	213.0	..	37,800	70,460	36.5	35	14,505	1,494	783	..	..	..	..	46.8
Wyoming	115.0	258.5	174.0	203.5	37.5	....	44,895	29.0	55	66,100	1,133	1,175	..	..	12	1,250	122.0
Totals	945.6	2,473.9	1,296.4	4,128.5	43.8	253,600	1,144,361	682.2	50*	319,994	8,431	4,769	1	0.1	*12	3,950	308.3

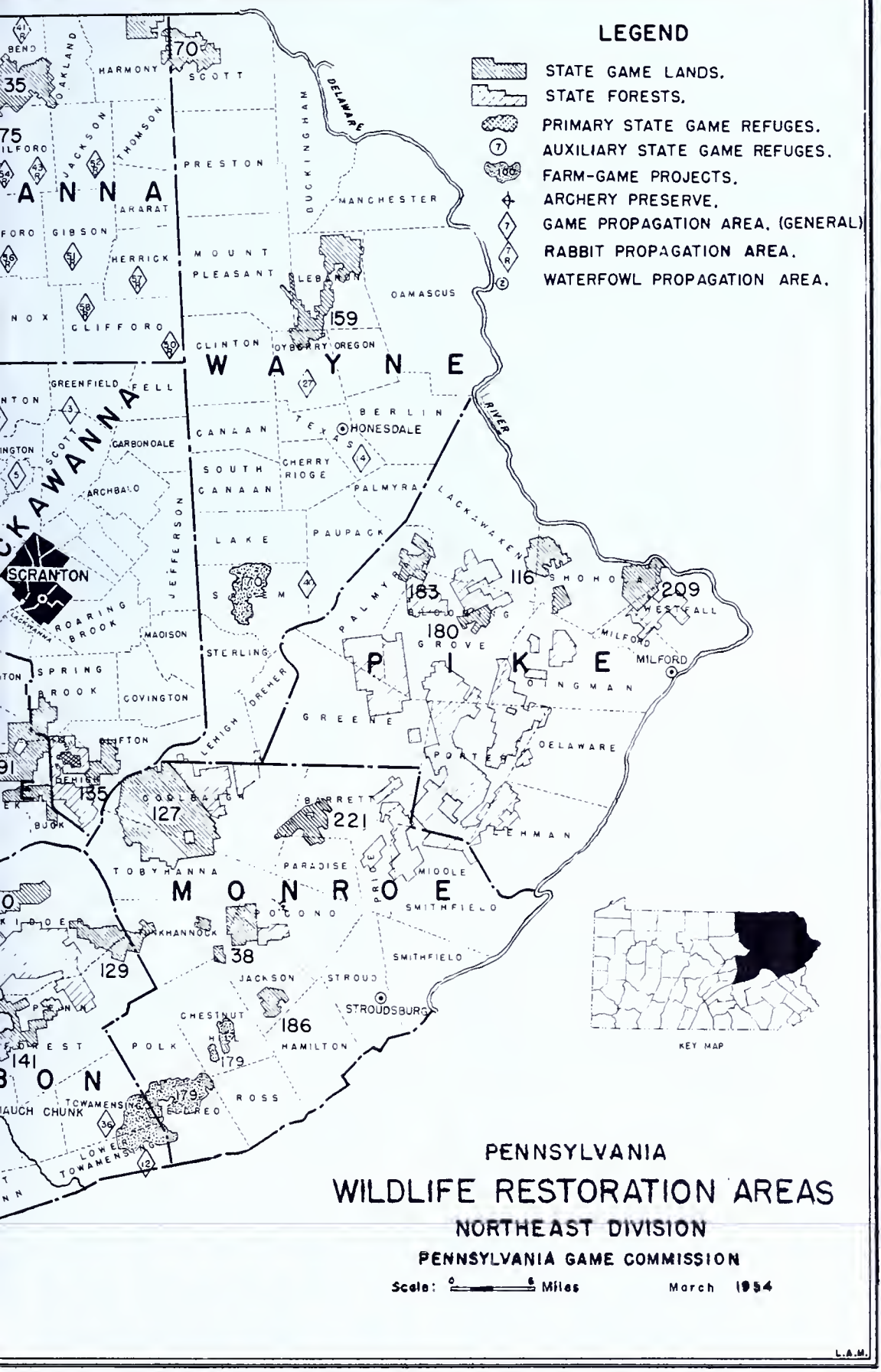
* Average.

Special Notes:

Several small Nursery Beds located on State Game Lands produced limited numbers of Multiflora Rose Seedlings for Wildlife Plantings. These were maintained on Lands in Pike, Susquehanna and Wayne Counties.

† Waterfowl Foods planted on various Areas include Wild Duck Millet, Sago Pondweed, Wild Rice, Wild Celery, Smartweed, Watershield, Wampee, Duckmeal, Chufa, Nut Grass, etc.


BRADFORD
SULLIVAN
WYOMING
LUZERNE
COLUMBIA
MONTOUR
NORTHUMBERLAND
SUSQUEHANNA
WELLS
SOUTH CREEK
RIDGEBURY
ATHENS
LITCHFIELD
WINOSAM
WARREN
219
140
APOLACON
CHOCONUT
MIDDLETOWN
FORE LAK
123
COLUMBIA
SPRINGFIELD
SMITHFIELD
ULSTER
SHESHEQUIN
ROME
ORWELL
PIKE
SUS
RUSH
TROY
WEST BURLINGTON
BURLINGTON
NORTH TOWANDA
TOWANDA
STANDING STONE
HERRICK
STEVENS
ARMENIA
GRANVILLE
FRANKLIN
ASYLUM
WYALUSING
TUSCARORA
AUBURN
MONROE
CANTON
LEROY
BARCLAY
OVERTON
ALBANY
TERRY
12
36
142
172
MESHOPPEN
178
WILMOT
WINOHAM
MEHOOPANY
NORTH BRANCH
FOX
ELKLAND
FORKS
CHERRY
66
COLLEY
HILLSGROVE
SHREWSBURY
LAPORTE
LAPORTE
134
13
57
LAKE
DAVIDSON
13
ROSS
LEHMAN
SUGARLOAF
206
JACKSON
FAIR MOUNT
BENTON
156
600
UNION
NANTICOKE
NEWPORT
UNLOCK
PLYMO
GREENWOOD
FISHING CREEK
55
DELAWARE
147
ANTHONY
MADISON
104
ORANGE
BRIAR CREEK
SALEM
CONYNGHAM
SLOCUM
HOLLENBACK
NESCOPECK
SUGAR
91
TURBOT
LIMESTONE
DERRY
MONTOUR
LIBERTY
VALLEY
92
115
DANVILLE
BLOOMSBURG
110
MIFFLIN
COOPER
MAIN
58
BEAVER
CREEK
187
HAZEL
POINT
GEARHART
RUSH
MAYBERRY
FRANKLIN
CATAWISSA
ROARING CREEK
LOCUST
SUNBURY
122
AUGUSTA
SHAMOKIN
ALPHO
CLEVELAND
118
CONYNGHAM
UPPER ROCKEFELLER
LOWER AUGUSTA
165
COAL
MT. CARMEL
ZERBE
LITTLE MAHANOY
CAMERON
E. CAMERON
84
123
JACKSON
WASHINGTON
UPPER MAHANOY
LOWER MAHANOY
JORDAN
90
SUSQUEHANNA RIVER
N. BRANCH SUSQUEHANNA


LEGEND
STATE GAME LANDS.
STATE FORESTS.
PRIMARY STATE GAME REFUGES.
AUXILIARY STATE GAME REFUGES.
FARM-GAME PROJECTS.
ARCHERY PRESERVE.
GAME PROPAGATION AREA. (GENERAL)
RABBIT PROPAGATION AREA.
WATERFOWL PROPAGATION AREA.
WAYNE
PIKE
MONROE
SCRANTON
HONESDALE
MILFORD
STROUDSBURG
DELAWARE RIVER
159
183
180
209
116
127
221
135
38
129
186
179
141
KEY MAP
PENNSYLVANIA
WILDLIFE RESTORATION AREAS
NORTHEAST DIVISION
PENNSYLVANIA GAME COMMISSION
Scale: 0 6 Miles
March 1954
L.A.M.

Cooperative Farm-Game Project Program Accomplishments With Pittman-Robertson Funds
JANUARY 1, 1948 TO DECEMBER 31, 1953
NORTHEAST DIVISION

County	Leased		Safety Zones Established, Dismantled	Refuges Established, Maintained	Food Strips and Nesting Cover		Contour Strips	Seedings Planted			Wildlife Borders Developed
	Farms	Acres			Strips	Acres	Acres	Coniferous	Multiflora Rose	Other Species	Lin.Ft.Cut
Columbia	206	20,162	995	12	42	19	.....	89,000	55,950	3,738	5,075
Luzerne	69	6,931	593	3	17	6	68	47,000	3,267	2,600	2,300
Monroe	201	20,781	558	2	13	10	.....	114,850	8,500	3,600	8,500
Montour	160	17,045	879	27	78	85	.....	101,800	178,500	11,500	4,430
Northumberland	362	28,496	1,457	20	77	33	1,868	179,400	191,450	2,800	43,440
Susquehanna	327	35,966	1,642	7	6	3	24	208,900	151,200	46,125	23,758
Wayne	34	2,880	125	.....	4	2	.....	9,200	4,900	2,100	950
Wyoming	41	7,809	158	1	4	16	.....	38,700	25,500	9,600	14,130
Totals	1,400	140,070	6,407†	72*	241	174	1,960	788,850	619,267	82,063	102,583

* All Refuges are maintained the entire year.
† All Safety Zones are erected prior to the beginning and dismantled after close of the Hunting Season.

Other Leased Areas (Propagation Areas—Rabbit Farms, etc.,) Accomplishments With Pittman-Robertson Funds
JANUARY 1, 1949 TO DECEMBER 31, 1953
NORTHEAST DIVISION

County	Food Strips						Seedlings		Forest Cuttings			Fruit Trees		Waterfowl Management	
	Cleared	Planted to Grains	Seeded to Clovers	Maintained in Sod	Plots Purchased		Evergreens	Others	Release	Border-Edge Width*	Border-Edge Length	Released	Pruned		
	Acres	Acres	Acres	Acres	No.	Acres	No.	No.	Acres	Ft.	Ft.	No.	No.	Foods Planted	Acres
Bradford	11.0	11.0	5.5	....	1	0.3	.....	.....	....	....	.....	....	....	Duckmeal	7
Carbon	....	....	....	....	11	2.2	.....	.....	....	....	.....	....	....		
Columbia	1.0	8.8	1.0	2.0	22	11.2	30,000	11,757	....	25	6,200	....	372		
Lackawanna	None														
Luzerne	....	....	....	....	1	3	.....	.....	....	....	.....	....	....		
Monroe	None														
Montour	....	....	....	....	9	7.3	2,000	13,500	....	....	.....	....	....		
Northumberland	....	....	....	....	18	3.6	.....	.....	....	....	.....	....	....		
Pike	None														
Sullivan	....	....	....	....	3	2.8	.....	.....	....	....	.....	....	....		
Susquehanna	2.5	16.5	3.0	2.0	1	0.3	151,000	9,800	27.0	30	13,200	121	231		
Wayne	....	73.0	49.5	53.0	....	....	11,100	9,000	....	30	1,500	....	....		
Wyoming	....	....	....	....	6	1.2	.....	.....	....	....	.....	....	.....	Duck Millet	6
Totals	13.5	109.3	59.0	57.0	72	29.2	194,100	44,057	27.0	28*	20,900	121	603	Duckmeal &	13



Small lakes throughout the Division attract waterfowl. Planting shorelines with aquatic foods was included in the Federal Aid program.

for waterfowl, and managing forest areas by cutting timber along field and woodland borders to improve fruiting of the remaining trees and shrubs. Wild fruit trees were made more productive by removing surrounding tree competition and by periodic pruning. Federal aid funds partly financed the construction and maintenance of access roads to various wildlife development areas, essential if food and cover is to be retained over the years.

Improvement of waterfowl habitat is important in this portion of the state where nature has already produced numerous lakes—the result of ancient glaciers moving down from the north. Developing ditches and potholes in marsh areas, and the planting of numerous aquatic plants to provide additional food and cover for waterfowl has been financed with Pittman-Robertson funds. Reference to the table of accomplishments will indicate the extent of these activities.

State Game Lands No. 57, containing 28,064 acres, located north of Noxen and east of the old town of Ricketts is one of the largest single Game Lands areas in the state. Although located primarily in Wyoming County it is hunted heavily by sportsmen from Lackawanna, Luzerne and Sullivan Counties. Being primarily wooded, the principal game species are deer, bear, wild turkey, squirrel and ruffed grouse. Many beaver dams and lakes attract migratory waterfowl. Located on the headwaters of Mehoopany Creek are three lakes totalling approximately 60 acres, previously constructed by the Commission and named the J. Q. Creveling Lakes, in honor of a great conservationist and former member of the Commission, now residing in Wilkes-Barre. Development of food and cover on these and other water areas with the aid of Pittman Robertson funds, has helped attract and hold migratory waterfowl, thus furnishing much sport for local hunters.

Wild turkeys have increased in

numbers on and adjacent to State Game Lands No. 57, primarily due to establishment of scattered field areas, which provide the small grains, greens such as clovers and a good supply of grasshoppers and other insects required in their diet. Forest-edge and roadside cuttings have increased the ground cover for small game species and produced browse for deer. Releasing and pruning of apple trees have done much to provide additional food for deer and black bear. Both are particularly fond of fleshy fruits.

Another area on which wildlife restoration practices are very evident is a tract of over 5,000 acres located north of Warren Center in Bradford County. Composed largely of marginal farms, this area formerly owned and managed by the United States Soil Conservation Service, and known as the Resettlement lands, was turned over to the Pennsylvania Game Commission in February, 1951. Since that time hundreds of acres of grass—clover fields have been improved by application of fertilizer and lime, many acres were planted to grains, fields contoured and hedge rows of multiflora rose and other shrubs were planted. Additional evergreen seedlings were established to provide travel lanes and winter cover for wildlife. Deer are plentiful. Ruffed grouse, cottontail rabbits and limited numbers of ringnecked pheasants are harvested annually. Detailed plans have been approved to conduot wildlife development practices on the many field areas formerly pastured by nearby farmers. The full value of this wildlife restoration work will be more evident as the years pass.

During the past few years Monroe County sportsmen and hunters from nearby industrial centers have en-

Field areas established throughout mountainous regions have been planted to small grains and grasses, thus providing necessary food and insect life required by the wild turkey and other forest game.





Forest edge cuttings on Farm-Game Projects, Rabbit Farms, and State Game Lands have done much to stimulate growth of berry-producing shrubs and low, woody game cover.

joyed improved hunting on and adjacent to the Tobyhanna Military Reservation, a portion of which became Game Lands in May, 1949. On this tract known as Game Lands No. 127, forest cuttings were conducted on a large scale, scattered areas were cleared and planted to grains and clovers, and thousands of cover and game food producing plants were introduced in an effort to provide better grouse hunting. Waterfowl habitat on Brady's Lake was improved by planting aquatic plants, including Wild Duck Millet, Smartweed, Duck Potato, Wild Rice, etc. Accessible from many roads, this Game Land attracts increased numbers of hunters.

State Game Lands in every county were extensively managed during the past few years. Space does not permit comment on all areas, but much has been done with funds provided under the wildlife restoration act.

Other areas developed for wildlife with the aid of Pittman-Robertson funds include rabbit farms, propagation areas, auxiliary refuges and one archery preserve. Propagation areas and rabbit farms were developed primarily to create improved conditions for rabbits. This was accomplished by planting and seasonal mowing of clover strips, cutting woodland borders to provide brush piles and low woody cover, conducting forest cuttings, releasing fruit trees and periodic pruning to increase food in the form of succulent sprouts and fleshy fruits. Similar management practices were applied on auxiliary refuges to provide food and escape cover for all game species.

The archery preserve is one of the two areas established in Pennsylvania on which hunting with bows and arrows only is permitted. Archers must purchase a special license to hunt within the preserve. Located on State Game Lands No. 13 in southern Sul-



Natural game food and cover on Farm-Game Projects, Rabbit Farms, and other open hunting areas are supplemented by the purchase of standing grains adjoining fencerows and woodlots.

livan County, this area creates much interest, and benefits from the many restoration practices conducted on the preserve and surrounding game lands.

The early development of the Cooperative Farm-Game Program was confined to the more densely populated and better agricultural areas of the state, primarily the southeastern and southwestern portions. As the benefits of the program became evident the Game Commission decided to extend the program to the entire state.

Cooperative Farm Game Projects are located in eight of the thirteen counties in the northeast division. They are established in counties having the greatest agricultural development. Of the 152,611 acres now under agreement, 140,070 acres were leased with the aid of Pittman-Robertson funds.

This division contains some of the largest projects. Projects containing more than eleven thousand acres are located in Monroe, Montour and Northumberland Counties, while one containing more than twenty-four thousand acres is located in Susquehanna County.

More than fourteen hundred farms were added to the Cooperative Farm Game Program during the six years of operation with Pittman-Robertson funds in this division. The statewide program now consists of 10,383 farms containing 1,048,145 acres.

Technical assistance and advice were rendered to cooperators in establishing many conservation practices on the land. In an effort to encourage cooperators in the use of cover crops, which are beneficial to wildlife, cooperators were given 67,615 pounds of rye grass seed for planting in the last cultivation of corn. A total of 1,629 pints of crow repellent were distributed to cooperators in an effort to reduce corn seed damage by crows and blackbirds.

As in other areas of the state, requests for participation in this program far exceed expansion possibilities. Game Commission policy does not permit further major expansion at this time as most of the available funds are being used to develop sound wildlife restoration practices on farms now in the program.

This is the second of a series of articles on each Commission division, reporting to the sportsmen and conservationists how Pittman-Robertson money has and is being spent in an effort to maintain and improve wildlife conditions. It is hoped that these articles tell what is being done and where you as a sportsman can go personally and observe this management work.

. . . The End



the Double-Dog of Devil's Ridge

BY KEITH SCHUYLER

The Story So Far: Ez Killery had become famous as a breeder of tough mountain dogs, his ill-kept kennels on Devil's Ridge producing fox hounds much in demand. Then, one spring, distemper struck. Rex, the sole surviving puppy, was black as the ace of spades and the special object of his master's perverted hate. The big hound was also the best dog Ez had ever owned. Then he made the worst mistake any dog can make—chasing deer. Killery's rage almost resulted in him killing his most valuable possession. With a much advertised auction sale near, the man used every brutal method known to break the dog of his habit. Finally the fatal day arrived and Killery took the leather-scarred hound afield to show the interested bidders the results of his breeding and training. Rex performed beautifully and his work on both red foxes and wildcats brought admiring looks from the gallery. They were on their way back to Killery's mountain shanty for the start of the auction when . . .

ON the return trip, there was much low talking and the men gathered in little groups as they walked along. Ez, now more sure of himself than ever, forced Rex to walk at heel and distained use of the leash. He was ahead when they reached the abandoned farm again, and he stopped to wait for the others.

"While we're takin' a little rest, we could be talkin' price fer this here dog," he said in his peculiar whine. "My old woman will have dinner ready fer me when I git back, and it'd save a ruckus if we could talk business right here. The kids have takin' quite a likin't to this here dog." He knew his partly true statements would be another good selling point.

The assembled men stood awkwardly for a few minutes. Each had a bid in mind, but none liked to start it.

"Who wants to make it a thousand fer a starter?" Ez tried to look pleasant through his soiled beard.

The fat man coughed into his glove and grunted. "I'll make it half a that."

Ez turned mean. "You all know I been askin' a thousand. What ya tryin' t'do; rob me?" Then he drifted into his whine, "You know the dogs is all I have fer a livin'."

A well-dressed fellow stepped forward. "Two of us have been talking it over, and we're willing to pay your thousand. We'll take him on shares."

The fat one flushed. "Teaming up on me, eh?"

The other bidder shrugged his shoulders and remained silent.

"I'll make it eleven hundred."

Ez couldn't contain his grin. The fellow who spoke was just a handler, and if he could bid like that, almost anything could happen.

"Twelve!" the fat one said.

"Alright boys," one fellow who had not spoken now stepped up. "I'm making one bid; fifteen hundred."

Several grinned and shook their

heads. The fat man grimaced, the handler stepped back with a resigned expression and the rest focused their gazes elsewhere.

"Any more?" questioned Ez happily. "He's a good dog."

The fat man rubbed his gloves together nervously, looked tempted, then turned away. "Nope, I'm done."

The well-dressed one looked unhappy, then smiled. "He's all yours, but I really envy you."

Obviously there were no more bids coming, and the group made motions to start moving. The successful bidder said he would make out a check when they got back to the house. Ez started to say something, suddenly had sense enough to keep his mouth shut and then took the lead across the open area. Rex trailed behind him.

Not two hundred feet in front of them, an old buck, reluctant to leave his warm bed despite the commotion that had taken place in the next field earlier in the morning, now stirred uneasily. When Ez was only fifty feet from him, his huge rack of antlers came rising majestically out of the pocket of dry grass.

Ez stopped, heart beating wildly. He didn't dare speak a word of caution to the dog in front of these men. Hoping his voice might frighten the animal away before Rex took notice, he spoke unnaturally loud.

"Say now, there is a big deer if ever I saw one!" He tried to keep in front of the dog.

Everyone saw the buck as it rose to its feet and momentarily eyed them. Then it snorted and wheeled for the nearby woods. A black shadow twisted around Ez's legs and was only a few leaps behind the buck when it hit the edge of the timber.

"Whoa! Rex! Whoa!" Ez screamed.

Rex heard, but the tone of the voice worried him on. His tail dropped a little, but then both deer and dog were gone.

When Ez finished screaming, he turned to the man who had offered the fifteen hundred. "He's never done this before! So help me God, I never seen him even look at a deer before!"

The well-dressed one smiled wryly. "I knew you were whipping that dog for something, but two of us talked it over and decided to take a chance. I've heard you were cruel to your dogs. Somehow I admire that dog's spirit even if he is worthless."

That just about summed up the thoughts of the others, and they strode on ahead with mingled looks of sorrow and pity. Soon Ez was standing alone, and he trailed ashen-faced after them. He waited back in the brush until all the cars were gone before he went in to face his wife.

Rex was back the next morning, uneasy, and carrying his tail low. Strangely enough, Ez put on a show of friendship, but the dog sensed an insincerity in the elaborate coaxing and wheedling. Finally habit overruled fear, and Rex submitted to the leash.

Immediately Ez's manner changed. He strode to the shed and came back with his shotgun. The lash, wrapped around his middle under his frayed jacket, was hidden from the dog. But the shotgun itself worried Rex. Ez seldom shot foxes unless he was hunting in someone else's territory. And then he would always get his ancient car out of the shed first before approaching the dogs. Besides, the kerosene light in the shanty had been on much of the night and Ez smelled strongly of cheap whiskey.

The man and dog were not more than out of sight of the shanty when Ez stopped to fasten the leash around a young maple. He rested his old double-barreled, hammer gun, loaded with number two's, against a nearby tree. Then he uncoiled the lash from about his waist.

Rex backed away and growled low in his throat. But Ez was in no hurry; he wanted to enjoy this. He reached in his jacket, brought forth a nearly



empty bottle and busied himself with the few remaining ounces.

"Now dog," he said thickly, at last, "you're gonna pay fer all the work and food I been wastin' on ye. I'm gonna lick ye 'til there ain't nothin' left but bones. Then I'm gonna blow that to hell with a load a number two's."

He went on talking, working himself up to the task ahead, as the dog cowered against the leash, still growling softly. Finally Ez flung the length of the lash behind him, and then he whipped it forward with all his strength. Rex howled and lost blood. Time after time the rawhide bit into him as Ez yelled his vituperations hysterically.

Then Ez made a bad swing, and the lash coiled around the dog's leather leash a foot from his collar. Rex snapped savagely at the lash as Ez perked frantically to free it. Whether it was the dog's teeth or the heavy jerk that parted the old leash, it is difficult to tell, but suddenly the dog went sprawling, free.

Ez, too, stumbled backward, and he desperately whipped the lash behind him to prepare for an attack by the dog, his face suddenly transformed into a wild mask of fear.

Probably Rex would not have gone for him, but he sensed another blow as Ez drew back, and the maddened animal charged snarling at his enemy.

Unknown to Ez, his whip had snaked over the big hammers of the shotgun. Maybe one of them was cocked, maybe the safety catch was just worn, but there was a heavy resistance to the lash as Ez swung toward the dog with all his might.

The charge of number two's caught him full in the back.

Rex, startled by the blast, missed his arm target and crashed into the dead man's chest. His momentum carried both to the ground and the dog scrambled quickly to his feet. He backed away, still snarling.

When Ez failed to move, Rex circled him cautiously, and something deep inside told him that he was free of Ez forever. The scent of death was not new, but somehow this was different. It gave him an uneasy feeling of guilt, as though he had done this awful thing. He remained close by until night fell, licking his many wounds, and then he drifted back toward the shanty.

A searching party found Ez the next afternoon. Force of habit kept the dog in the area, but he would not let any of the men get close enough to put him on leash. The length of broken leash on the dog's collar told them the story, and somehow none could find sympathy in their hearts for Ez. The children fed Rex and played with him when he came around the shanty. But then, one day the other dogs, Ez's crusty old widow and the children, were all gone.

Offers to buy Rex kept coming, unclaimed, to the nearby town's post office. Almost all of those who had come to the "auction" tried secretly to buy him at a lower price. One thought he could be broken of chasing deer, others wanted him for stud and still others found buyers in Canada where dogs are used on deer. Had Ez waited, he could have had at least half the fifteen hundred for the black dog.

But now Rex belonged to the hills. For a time he fed on the little that was left by the foxes of the small doe he had killed, but he soon was forced to kill again to live. At first he settled for rabbits, but his appetite required more than that. Besides, he was too big to catch the cottontails with any consistency in the brush.

Rex became a scourge to the wildlife in the area of Devil's Ridge. It was another hard winter for the section in more ways than one.

In late winter, the urge that comes to all dogs took Rex out of the territory, down into the farming country. A big Airedale bitch, that took

his fancy, elected to run with him. Since she was never kept tied, it was a simple matter for her to leave. And, her presence brought more dogs, until by early spring, there were seven big brutes living off the land.

Their depredations went unnoticed that winter, and when spring warmed into summer, several of the dogs drifted back to their former homes. The Airedale had remained with Rex, however, and her litter added five more mouths to feed.

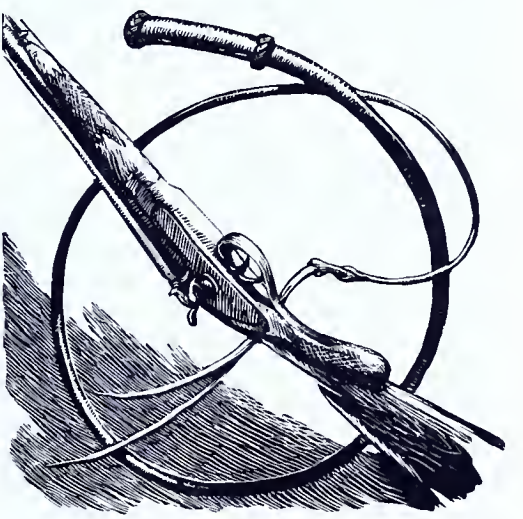
Rex would only leave the hills, alone, when a need deep in his scarred chest drove him back to civilization. Five little fingers in his black curls soon soothed the ache and he became a familiar sight among children over a wide area.

He would be seen trotting along with them on their way to school waiting for the scraps of food the children would rob from their lunch pails for him. Other times he would show up at noon and frolic like an overgrown puppy with them in the school yard. They would maul him, ride him and mistreat him with glee. And, Rex loved it.

However, when adults would make their appearance, man or woman, Rex would drop his tail and trot silently away. He was always alone on these excursions, and when the pack began to attract attention that winter, it threw no suspicion on him.

But deer were becoming scarce. And sportsmen were up in arms over the partially devoured carcasses found in woods. Experienced hunters combed the hills for the pack, but the black dog kept his companions for the most part safe. True, one dog was lost from the pack of eight when it was caught in a trap, but the guns didn't account for any.

Then the pack, pressed for food, began to cut down livestock. At first it was just a few lambs. Then one night a farmer found an even dozen of his sheep slaughtered. A calf on another farm was downed.



Rex still mixed with the children. And, gradually it became apparent that the big killings were always in the areas in which the black dog had last been seen. Several farmers swore they saw him with their lights when they came running to break up slaughter of their stock. Reports were coming in from over two counties.

No one wanted to believe that it was Rex; those who knew his story, secretly sympathized with the big dog.

Then one day Rex cleared himself, at least momentarily. He was trotting along with a group of youngsters when a big German shepherd watchdog, known for his nasty disposition, pulled the staple on his chain. As the children came laughing along the dirt road from the bus stop, the shepherd charged across a field from the farmhouse.

At the time, Rex was behind with a little fellow who was valiantly trying to straddle him. But when the children screamed, their black friend suddenly turned into a raging fury.

The shepherd managed to slash the leg of one shrieking child before Rex arrived. Then a cloud of dust and black thunder hit the vicious beast and it was all over in a matter of

seconds. The farmer came running to the rescue a minute later, but Rex faded back along the road at his approach, looking over his shoulder occasionally, but satisfied that everything was now all right.

His respite was short-lived, however. Deeds of the wild dog pack were attracting too much attention in the newspapers, and the farmers were demanding action. Again the reports began to link Rex with the pack. He became, "the big black dog that caused old man Killinger's death."

Finally there was no doubt in anyone's mind. Actually, it was the Airedale and a moment of carelessness that provided the proof needed to positively identify Rex as the leader of the pack.

One clever farmer had arranged a trap after his neighbor lost several sheep to the dogs late in January. He staked a lamb, which was sick anyway, out in the pasture back of his barn, and he placed a number of heavy steel traps around it. He informed his neighbors, and there was a large group of them, armed with high-powered rifles, along his barnyard fence that night. Others had strong flashlights that would carry a beam to the traps.

Habits of the pack had become more or less fixed, and if they were to take the bait this night, they could be expected about ten o'clock when most farmers had retired. As the hour approached, only the lonely bleat of the frightened lamb could be heard as the lights blinked out in the farmhouses.

Suddenly the monotonous tone of the lamb's cry was broken by a series of frantic bleats. There was a quiet snarl, a short silence. Then the big Airedale stepped onto a trap. Her surprised yipe was the signal for the lights to go on.

A barage from deer rifles tore up the snow as Rex's huge form was silhouetted against the snow. Most of the riflemen were stiff with the cold and excitement, however, and their first volley only succeeded in dropping the Airedale and one of her youngsters from the previous litter.

Rex stopped a second to muzzle her, and the length of old leather leash showed up plainly, then the rifles cracked again. Rex felt a tug at his throat as he leaped for safety of the darkness. There was an ugly snap, and he rolled end over end in the snow, three toes of his right front foot behind him in the cruel jaws of a trap.

With the pack cut to five, it was easier for them to find sufficient food. But the secret was out. Hunters over a wide area read with interest the account which linked the children's pet with the ringleader of the pack.

"The Double-dog of Devil's Ridge," screamed the newspapers. Rex's history was laid bare to the public, and only those who had not suffered through his cunning retained a spot of sympathy for him.

Extensive hunts were organized, but the hunters accounted for but one dog. Poison was tried, but the dogs were making fresh kills each



time they fed; where game had become scarce, livestock was plentiful. Meanwhile, Rex had picked up three additional strays. But the hunts continued. Winter was running out, and the men knew if the pack survived until spring, there would be a repetition of the slaughter the following winter. The dogs could never be found when the foilage came on the land and the farmers were busy with plowing.

It was in late March that winter got in one last good lick. The storm hit suddenly, as late storms will, and many of the children were caught walking home from school, those who didn't have transportation.

Little Lorrie Kramer, whose dad lived up a long dirt road in the woods, had farther than most to walk. In the second grade of school, his little legs were no match for the drifts that quickly piled up, and he soon became turned around in the blinding storm.

Rex found him, sobbing frantically, far from his home. The child was exhausted, and the warm body of the big dog was a God-send. Rex licked at the snow crusted around the child's pull-down hat and whined nervously. Something was wrong, but his limited intelligence presented him with no answer to the problem.

He moved slowly once, and the child had presence of mind enough to cling to the worn collar around the dog's neck and follow. At least this was doing something. Twice the little fellow fell, but with this new comfort in this loneliness, he scrambled to his feet and again clutched at the waiting dog. They must have moved a mile or more in this fashion, and it was getting completely dark when they finally scrambled down a bank of snow made by the plows fighting the blizzard.

Fortunately, a lane leading to a house was nearby, and the farmer was plowing it open to get his car off the main highway as the boy and dog approached. Rex was becoming increasingly apprehensive as they struggled up the partially cleared lane.

Then, out of the near darkness, the tractor lights came bouncing slowly at them. As the beam fell upon the snow encrusted pair, the black dog whirled and broke away. Lorrie lost his grip and fell on his face, howling lustily.

The farmer braked the tractor and let out a, "My God boy!" He slid quickly from his seat and ran to the youngster. Subconsciously he heard the nearby sound of a car horn above the howl of the storm as he was reaching down for the child.

The farmer's wife was attempting to soothe little Lorrie while she undressed him by the kitchen stove as the sound of feet scuffling on the porch was followed by a knock on the door. A worried looking man stepped inside.

"I've afraid I've hit your dog with my car," he said. "It's a big black one. He isn't dead yet, but he won't let me come near."

"Bad hurt?" asked the farmer.

"I'm afraid so," the stranger said apologetically. "I couldn't see him until I was right on top of him in this snow."

The farmer took a shotgun from the corner of the kitchen and grabbed a shell from a drawer. "Let's go."

"I thought so," he yelled above the wind a few moments later, "It's the Double-dog."

Rex blinked into the beam from the flashlight; he couldn't see the gun, but he smelled trouble. Despite his broken back, he lunged to his forefeet with a savage snarl and the two men drew back. But the jagged ends of bone moved with his effort. The bog's mouth flew open, then the jaws stiffened, his forelegs wilted.

Rex, the Double-dog, was dead.

. . . The End



Boy Scouts Start Good Turn For Conservation

During National Wildlife Week, March 21-27, more than 3,300,000 Cub Scouts, Boy Scouts, Explorers and their adult leaders will join sportsmen and conservationists in helping to focus public attention on the natural resources of America. For the first time since World War II, this greatest of all national youth organizations which is now entering the final year of its comprehensive three-year program, under the slogan "Forward on Liberty's Team," has been asked to carry out a national conservation Good Turn in 1954.

In a letter last June, to Mr. Arthur A. Schuck, Chief Scout Executive, the President of the United States, who is a member of the National Executive Board and also Honorary President of the Boy Scouts, suggested that the Boy Scouts undertake by concerted action to arouse public recognition of the need for adequate protection and wise management of our soil, water, mineral forest, grassland, and wildlife resources. President Eisenhower pointed out that the future of our country depends largely on how these resources are managed today and in the years ahead.

The Chief Scout Executive quickly and enthusiastically accepted the President's challenge. Ross L. Leffler, long-time members of the Pennsylvania Game Commission and also holder of highest honors as a Boy Scout official, was appointed chairman of the planning committee for the Scout's nation-wide conservation Good Turn program. Starting with a "kick-off" event during National Wildlife Week, 90,000 Scout units will embark on one of the most important programs in their history. From March through October they will crusade for outdoor good manners, promoting a special code of behavior. By special programs in schools, churches, service clubs, civic clubs, sportsmen's clubs, and other youth and adult groups, the Outdoor Code will be proclaimed to all America. A special poster urging the public to join with the Boy Scouts in conserving natural resources will also be widely distributed in March.

From April through September scout units will be developing local conservation projects. One big objective of the Conservation Good Turn is to get every acre of Scout owned land under sound conservation management, starting with a comprehensive land use plan. It is hoped that more than 800 Scout camps alone may become outstanding examples of sound conservation practices. As a climax event for the Good Turn, special demonstrations will be held on a Council, District or Unit basis next October. The purpose of these demonstrations will be to point up some of the local conservation problems, what the Scout program has done to help solve them, and what anyone can do.

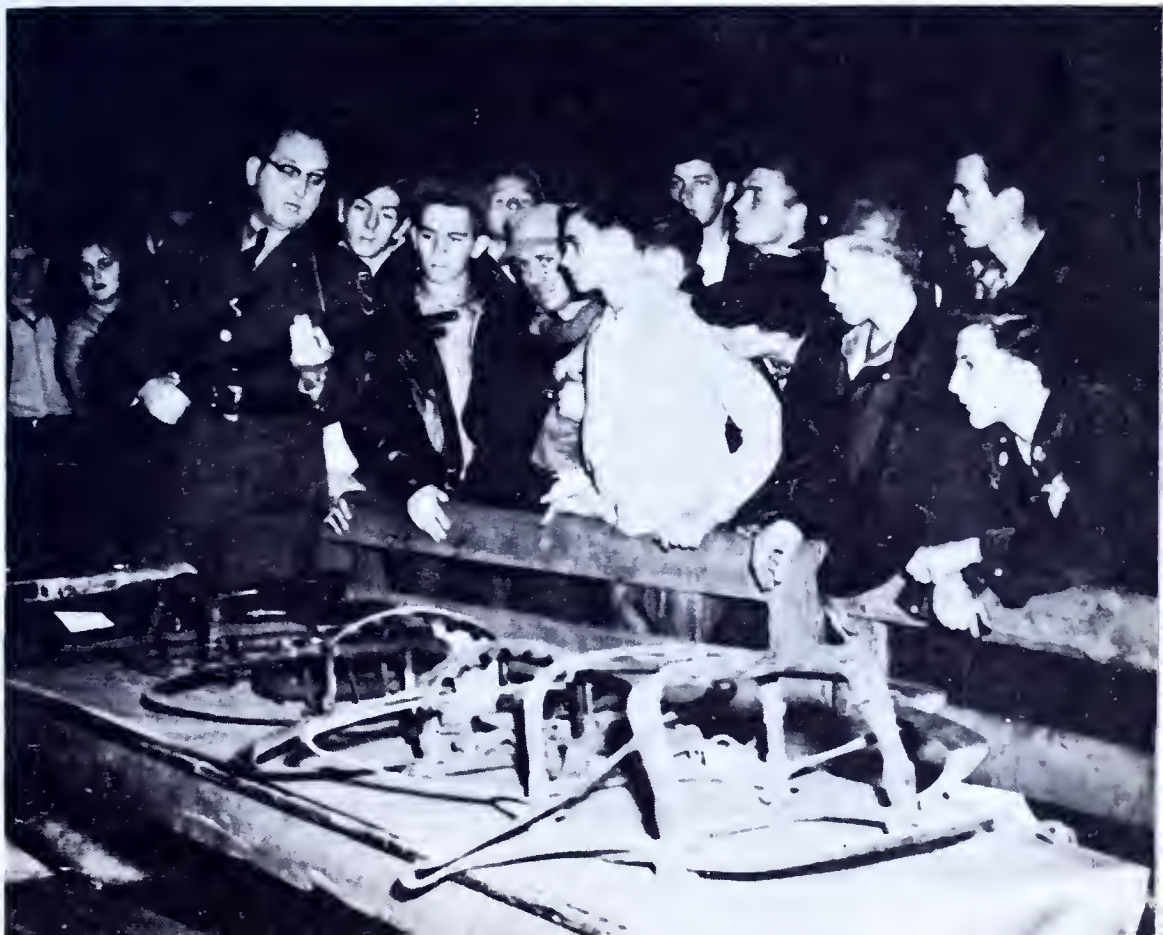
IN MEMORIAM

Lynn B. Rosenkrans, Conservation Education Assistant in the Northeast Division, died February 10, 1954, at Forty-Fort. A Commission employee since March 16, 1936, "Rosy" formerly served as a Game Refuge Keeper, District Game Protector, and Trapping Instructor. He was born in Penfield, Clearfield County, March 13, 1894. Throughout his service, Lynn Rosenkrans was a conscientious, devoted, and able officer. A host of sportsmen friends join Commission fellow officers in expressing sympathy to his wife and to his memory, appreciation for a job well-done.



Thousands of visitors to the 38th Annual Farm Show held in Harrisburg last January acclaimed the Game Commission exhibit as the highlight of the show. The hundred foot long display was designed and constructed under the direction of George Koehler, Commission exhibit preparator.

PGC Photo by Batcheler





PGC Photo by Forbes

THE MOST DISCOURAGING HUNTING PICTURE OF 1953

District Game Protector Norm Erickson, Emporium, and his son inspecting the largest of four elk killed illegally during the 1953 deer season. Some idea of the size of this animal may be secured by comparing it to the legal size buck deer hanging beside it at Erickson's headquarters.

This magnificent animal, largest of all Pennsylvania's wildlife species, might have sired many elk to enlarge the small herd which now roams completely wild, but fully protected by law, in Elk and Cameron Counties. But an unknown person or persons sighted the 900 pound bull during the past deer season and fired at least three shots into it. The killing was deliberate and inexcusable. Game Protectors and sportsmen who found the carcass worked hard to salvage it from the remote forested area.

Game Commission officials have been hopeful that Pennsylvania's elk herd, the only wild herd of its kind in the northeast, might increase in future years to the point where some type of limited hunting may be possible.

If 1953 was any indication, Pennsylvania hunters will never have the thrill of legally hunting elk in this state. Because of similar carelessness, greed, or stupidity, the biggest game animal in the state may be doomed to extinction.

Possession Limit For Wild Game

The Game Commission advises that persons who possess resident wild game lawfully taken in the 1953 season may keep such game only until and including July 1, 1954. A permit is no longer required.

Migratory game birds lawfully taken in the 1953 seasons may, by federal regulations, "be possessed for 90 days immediately following the close of the open season where killed." This requirement covers migratory game birds taken in any state in the United States, Puerto Rico, or Alaska, or imported from Canada, Mexico, or any other foreign country.

State to Manage Wildlife on Conemaugh River Reservoir Project

Last December the Secretary of the Army issued a 25-year license to Pennsylvania, acting through the Game Commission allowing the state game authorities to manage wildlife and administer game laws on approximately 7130 acres of the Conemaugh River Reservoir Project. The reservoir lies in Indiana and Westmoreland Counties.

Sportsmen in the area will welcome news that the Commission has assumed the job of wildlife management on the reservoir project, assuring that thousands of acres of game territory will remain open to hunting.

NOTICE ON BOUNTY RATES

PENNSYLVANIA GAME COMMISSION
(Excerpt from Official Minutes, Pennsylvania Game Commission Meeting, January 7, 1954)

RESOLUTION

WHEREAS, After giving due consideration to the present predator population:

THEREFORE, BE IT RESOLVED, That the Pennsylvania Game Commission, acting under the power and authority vested in it by the provisions of Article XI, Section 1101, of the Game Law, by resolution adopted this 7th day of January, 1954, hereby directs that for the period beginning June 1, 1954 and until further notice, the bounty payments authorized for the birds and animals enumerated below, if killed in a wild state in any county of the Commonwealth during the period specified and presented in the manner and under the conditions stipulated in the Act aforesaid, shall be as follows:

1. *Gray Fox*—$4.00 for each gray fox.
2. *Red Fox*—$4.00 for each red fox.
3. *Great-horned Owl*—$5.00 for each great-horned owl, adult or fledgling, killed during all months excepting November and December.

BE IT FURTHER RESOLVED, That the foregoing resolution shall be duly published in accordance with Section 1102 of Article XI of the Act aforesaid in the February and March issues of the PENNSYLVANIA GAME NEWS, also to be brought to the attention of the public by news release and other sources of public information; and

BE IT FURTHER RESOLVED, That the Executive Director is hereby authorized and directed to certify the foregoing as an act of the Pennsylvania Game Commission.

"I hereby certify the above to be a full, true and correct copy of the resolution establishing bounties on certain predators killed in a wild state within the Commonwealth from June 1, 1954 until further notice. Notice of this action is published in accordance with the requirements of the law."

Logan J. Bennett,
Executive Director
Pennsylvania Game Commission







1953 Special Archery Season

By Roger M. Latham

SINCE the inception of the Special Archery Season for buck deer in Pennsylvania in 1951, it has been customary to send a questionnaire to each successful archer and to report the results. Here is a report for the 1953 season (October 13 to October 25).

Eighty-four archers have reported killing bucks to date, which is a decided increase from the 33 taken in 1951 and 24 in 1952. This increased take resulted partially from a greater number of hunters (5,542 in 1951; 8,446 in 1952; 10,600 in 1953) and partially because Pennsylvania archers are becoming more skillful with the bow.

Only seventy of the eighty-four successful bowmen returned their questionnaires. These 69 men and one woman killed 16 spikes, 42 bucks with three to seven points, and 12 bucks with eight or more points. The best deer was an eleven-pointer taken in Venango County. Mrs. Florence Hetherington of Zion Grove reported bagging a nice six-point buck in Lycoming County. This was her fifth deer. She had killed three other bucks and a doe with a rifle in past seasons.

Fifty-three of the 70 deer were killed with a single arrow, but 11 archers put two arrows into their trophy and four men used three arrows. One deer was hit seven times and another four by rapid fire from one or more archers. The average distance from which all deer were killed was 35 yards. The shortest shot was eight yards and the longest 70

yards. Thirty-seven were shot standing, 18 walking, and 13 while running.

The effectiveness of the broadhead arrow for stopping deer is illustrated by the distances travelled by the bucks after being hit. Twenty-six died in their tracks or within a few yards; 21 moved 50 to 100 yards; 12 travelled from 100 to 200 yards; and 8 were found at distances beyond 200 yards. The greatest distance was slightly less than a mile.

Three of the 70 hunters had climbed a tree for better vision and shot their bucks from this position. Only two reported using deer calls.

These successful hunters were out in the deer country an average of 15 hours on 2½ different days. The maximum number of hours hunted was 40, but two were lucky enough to get their deer within the first fifteen to twenty minutes in the woods. Four others required only an hour to bag their deer.

As usual, the October hunter is able to see many deer even though he may not be able to approach many of them closely enough for a good shot with the bow. The archers saw an average of 5 legal bucks, and seven reported seeing 40, 37, 35, 15, 13, 11, and 10 while in the forests. These same hunters shot at 102 bucks for an average of 1.5 per man. One shot at six and two others at five each. Only two were crippled and escaped (this is probably well below the crippling loss by rifle or shotgun).

Of the 70 successful archers, two were boys of fifteen and two others were 17 and 19. Twenty-five were in their 20's; 23 in their 30's; 15 in their 40's; and one was 59. Nineteen of the 70 were bow hunting for the first time.

Four members of one club killed deer with the bow this year. Congratulations to Claude Wall, Richard Isett, Oliver Kohl, and George Kohl of the Reading Archery Club.

. . . The End







Champion of the Airways

By E. T. De Voe

THE distant honking of a flight of wild geese on a cold clear night in early March is the prelude not only to spring but to a life of promise for Will Prentiss of Danville in Montour County. Bill is a "riverman" who, for the past fifty years, man and boy, has studied the habits and migrations of the great waves of waterfowl who use the Atlantic flyways in their eternal shuttling between their nesting grounds in the north and their winter homes in the south.

For most of these fifty years Bill has chronicled the flights of wild geese over Central Pennsylvania, and not once have the giant birds failed to put in their appearance between the 4th and 12th of March. Following closely in the wake of the geese are their close relatives—the mallards—who visit Pennsylvania briefly around the end of March en route to their nesting grounds in Canada. Other species such as the canvas back, baldpates, teal, and golden-eyes follow with the regularity of scheduled air flights.

Will Prentiss displays part of his extensive collection of mounted wild ducks.



As the migration continues, Bill Prentiss keeps his eyes and ears open. His ears are so keen that he can readily distinguish between the dog-bark honking of wild swans and the sonorous tones of Canadian wild geese. By studying the form and shape of the flight pattern with his powerful binoculars, Bill can identify the number and the species of ducks in any flight. A ragged V, for example, indicates to Bill the fact that the flock has settled nearby. Since each bird has a particular place in the flight formation, it sometimes requires a flight of three or four miles to give the birds time to reform their symmetrical V pattern.

Bill keeps a record of the spring and fall flights of migratory fowl and reports the number and the species to the Fish and Wildlife Service of the Department of the Interior each year. In the fall he determines the kill along a 30-mile stretch of the Susquehanna. This information is forwarded to the Chief of the Waterfowl Section in Washington. Bill is proud of his membership in "Ducks Unlimited" and of his collection of duck stamps which includes every issue made by the federal government since 1934.

Prentiss operates a coal dredging plant near Bloomsburg for his livelihood, but his real love is the wildlife that thrives along the marshy banks of the river.



"Hare" Trials With Beagles

By Dave Fisher

FROM most of the letters received about Field Trials and in my talks with Beagle owners, I find that most sportsmen are familiar with the trials held on cottontails but they want to know how trials are held on hare.

First, trials on hare are held mostly in these states: Arkansas, Louisiana, Maine, New Hampshire, Mississippi, Texas, Michigan and New York with the latter state leading in number of trials and owners of hare hounds traveling long distances to enter their dogs in these trials.

There are a number of differences in the trials run on cottontails and those run on hare . . . the running rules, regulations, type of game and scoring system. Each type of trial has its devotees, and each of these differ in their opinions of such trials, but that is what makes love, life and running in trials so interesting.

Cottontail trials are run in braces, usually on Tally-Ho'd bunnies and are of short duration (usually not over 10 minutes) whereas the hare trials are run in packs and runs are of three hours duration. They require a hound with good condition and stamina. The cottontail runs in short jumps and is quite shifty where the hare steps out with long jumps and covers much more territory.

Claims are made that hounds run on hare are wild, swinging, stealing fools but I believe this to be the exception rather than the rule. The hare hound must do as much work and is credited for picking checks, more than for driving. It is not always the fast hound that leads the pack but one that also has the ability to carry a line and show that line to the pack. The misconception that if you have a cottontail hound and run it in a hare trial, it will develop a bad habit of swinging, being influenced by the hound that has been taught to run on hare, is one that I hope the owners of hounds will not let influence them and keep them from running in hare trials. If the hound knows its business, whether it has been run on cottontail or hare, it will run the game regardless of bracemates actions. I have seen many cottontail hounds win at hare trials and I also have seen many hare hounds win at the cottontail trials. I admit that it takes a hardy hound with real driving ability to run a hare, but beagles are still beagles regardless of what game they run. Many a good "driving" hound has been placed out of the win or place column at a cottontail trial by the judges simply because the judges are looking for a fussing hound that has to have its nose in every footprint left by the cottontail . . . standing on their noses . . . while the driving hound is out there catching it where the conditions are better. The idea is to have a hound that has guts, stamina, spirit, dash, push and drive . . . that will make the goosepimples on your hide by a nice pushing performance instead of a pottering one. Never forget that a rabbit is a rabbit whether hare or cottontail and a good hound should be able to handle both.

When you go to a hare trial (I have previously covered the cottontail type trial) you fill in your entry

form and give it to the secretary who checks to see that it is complete without errors. He then places the dog's name, Sire and Dam, Owner and Handler and number on a large sheet for each class. He then hands the owner or handler a card with the corresponding "number" of his hounds entry and this is handed to the men who are stamping the numbers on the hounds. The AKC rule is that each hound in each stake will have numbers affixed to their sides with durable paint (harmless to the dog) to be clearly visible and at least 3½ inches in height, starting with the number one (1) but in no case shall a letter or the number zero (0) be used. The secretary is the only person to record these numbers and have them correspond with each hound entered. Hounds are then spoken of only by number.

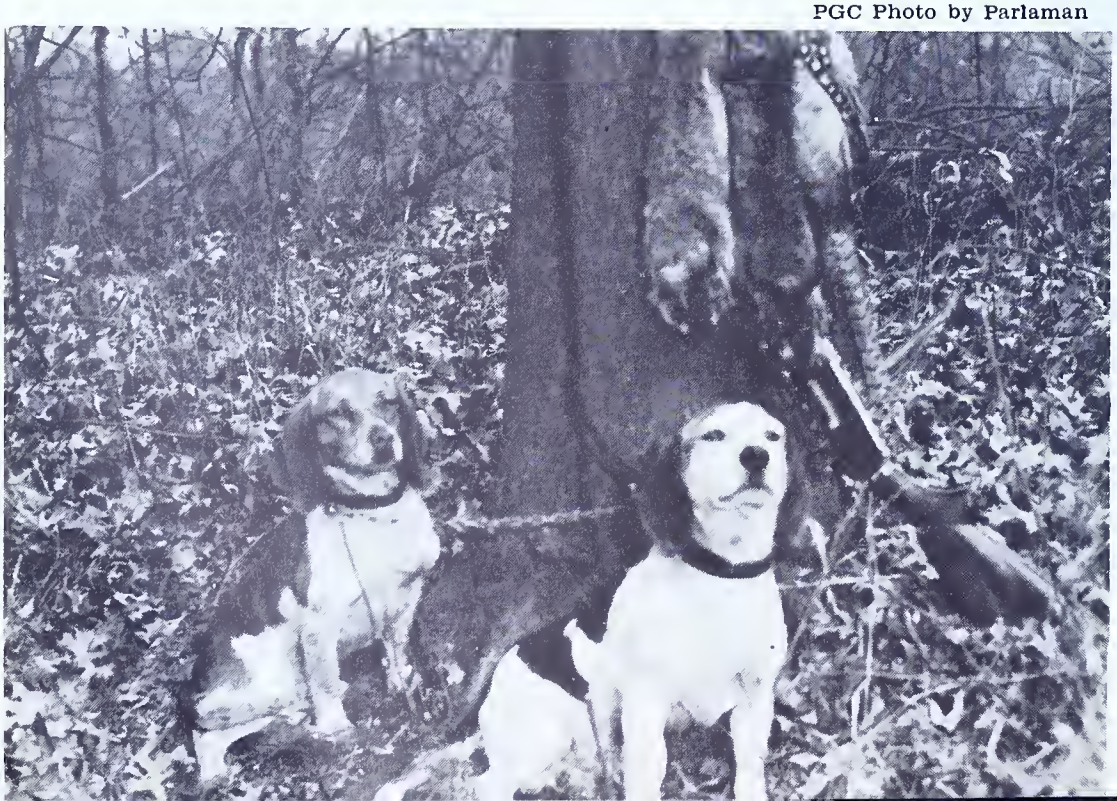
These numbers are cut from plywood with a small wooden handle on the back. This number is touched to the paint (which is in a shallow pan), usually yellow, and then pressed to both sides of the dog so it can be clearly seen. Some clubs hold "drawings" for numbers for the dogs but the fastest and easiest way is to give each dog his number as-he-is-entered by the secretary, for the stake. Prior to this numbering, all hounds are measured. Some clubs paint the dogs at the running area, others do it at the club headquarters.

On arrival at the running grounds, the Field Trial Chairman or Field Marshal, gets all the handlers and dogs together, takes them to a starting point where he thinks a hare can be started quickly and then calls the numbers from one (1) to as many as are entered and after all have answered as being present, he gives the orders to turn the dogs loose. Of course, all dogs start working and it is only a matter' of minutes before one of the hounds makes a strike and gives tongue, the rest of the hounds hark-in and join him and the race is on, over all kinds of terrain.

As soon as the hounds get started all handlers must remain on trails or with the gallery and not enter the woods where dogs are running (rules

The beagle is fast becoming the all-around dog for the hunter who wants to have a family pet, rabbit dog, and even bird dog. Running beagles in field trials will provide year-round pleasure from the dog afield as well as improve its hunting qualities.

PGC Photo by Parlaman



are all given in the American Kennel Club Rulebook).

Judges are on foot and they listen to which direction the dogs are going and he runs to a point where he thinks the hare will be seen by him. Each judge is at a different place. Let's assume that he has seen the hare cross at a spot within his vision. He then watches for the dogs to cross at this point. For illustration purposes we will say that hounds numbered 1, 2, 3 and 4 cross in that order. He will score the dogs for "drive"—#1—5 points, #2—3 points, #3—2 points, #4—1 point. If two dogs are neck-and-neck going through first, he may give them 5 points each. Some judges score differently, but this is about the average scoring.

Perhaps the judge has seen the hare make a sharp turn and the dogs overrun the check on this turn. He watches for the first dog to find the check. Let's assume that #4 dog hit that check first and gives tongue and takes off on the right line. The judge will score that dog 10 points for "check." The other judge, is or has been at some other points and perhaps at his points numbers 9, 7, 5 and 3 dogs have been the driving hounds and maybe #12 was the "check" dog. He scores them the same way the other judge has scored his.

Both judges have been in "high-gear" since the hounds *(pack)* took the line, going from place to place where they can see the hare cross and perhaps during the three hours of running time, the judges have seen the hare and the hounds 8 or 10 times and scored the dogs each time. At the end of the three hours when the dogs are ordered picked up, the judges get together and total the number of points both have given to each dog. The dog having the most number of points is given 1st place, next number of points 2nd, etc. for the 1st or win spot to 2nd, 3rd, 4th and reserve positions.

It takes an average of six hours to put in three hours of actual running time, because a pack of 15 to 25 dogs may split up and run different hare. If such a split occurs, the judges order the handlers to bring one pack into the other. Scoring and running time stops until all are together again. If the pack splits up and are running 3 or 4 different hare, the judges order all dogs picked up and they are taken to a new starting point.

All handlers then start trying to catch their dogs, which usually is a very tough job as the handler may have to go through a half mile of briars, thick slash or swamp to get his dog. In a case of this kind the handlers usually carry more than one leash so they can pick up as many dogs as they can get their hands on—his own or anyone else. He then calls out the numbers on the dogs he has caught. Maybe the owners hear and come and get their hound; if not it is brought to the new starting point

DOG TRAINERS— TAKE NOTE

Pennsylvania dog owners and trainers are reminded that except in defense of person or property they may not lawfully permit dogs that are their property or dogs they control to chase or train upon wild game between the 1st day of April and the 31st day of July.

There is one exception to this provision. When the Game Commission receives and approves a petition signed by 250 or more residents of a county, who held hunting licenses of the previous year or who are farmers or sheep raisers, whether licensed to hunt or not, foxes may be lawfully hunted in such county with dogs, day or night, throughout the entire year except for a 60-day period the Commission may designate.

anyway by the person who caught it. Numbers of all hounds are called again to see that they are all there, dogs are again turned loose and running time starts again.

Perhaps during the previous running time the judges have had "their eye" on 3 or 4 dogs that have been running silent or mute and leading the pack off the line or perhaps they have been barking (tongueing) off the line or "stealing" the line. As soon as the judge is sure of this he orders those dogs picked up and stops scoring those numbers and also strikes out any score they may have been given earlier.

All of these usually happen during the first two hours of running time; after all of the culprits or undesirables that are disrupting the trial are taken out, the dogs that are left being of better quality settle down to a race of stamina and endurance. Here's where they "separate the men from the boys" and it is no place for a dog that has not been really put in top condition because he would be in no shape to stand such hard, steady, grueling running. A hound for hare trials must be exceptionally good and must be in top condition physically.

As mentioned above, the hard work lies in picking up the hounds for recasting. Not all running grounds are as bad as I have depicted. I know of the grounds of the Black River Valley Beagle Club at Watertown, New York, where they have



Dave Fisher, shown here with two of his fine beagles, is glad to answer individual questions about the feeding, training, or breeding of beagles. Write him at RFD 4, Towanda, Pennsylvania and, PLEASE, enclose a self-addressed, stamped envelope for the reply.

around 200 acres, about two-thirds in spruce and balsam reforestation, the balance in open hilly land and grassy swamp, criss-crossed with cut-out trials. At some corners it is possible to see hare and hounds crossing for 200 yards each way. This makes easy work for handlers and is also easier on the judges.

There are perhaps other "incidences" that could be mentioned about running hounds in hare trials, more comparisons made, but the best way is to go to these trials, enter your hounds and learn first hand. It's fun, it's healthy and as a sportsman you'll enjoy running in both types of trials.

. . . *The End*

"A True Sportsman Knows His Limit—Anywhere"

"A True Sportsman Knows His Limit—Anywhere" was the headline of a two-page spread that appeared prominently during November in the pages of national sportsmen's magazines, the Wildlife Management Institute reports. The copy, which is the most recent in the 18-year moderation series of the Seagram-Distillers Corporation, hits strongly for the protection of our national wildlife heritage.

"Conservation," the advertisement observes, "sets a limit on how much a man should shoot. Moderation puts a limit on how much he should drink." Simply stated, moderation decrees a closed season on drinking as long as there are shells in the guns. This excellent advice is also one of "The 10 Commandments Of Safety" of America's leading makers of sporting arms and ammunition.

America's Number One Deer Rifle

By Ed Shearer

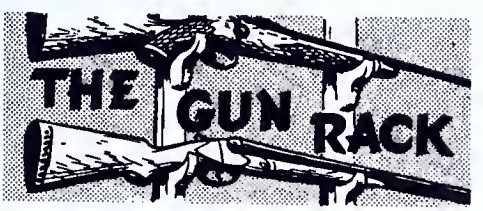
IF A GALLUP poll were taken among deer hunters as to the most popular deer cartridge, there is no doubt the winner would be the 30/30. Despite the advertising and ballyhoo given our modern cartridges, this sixty-year-old venison-getter is still the world's best seller among center fire rifle cartridges. The 30/30 over the years has been not only the most widely used, but also the most discussed and cussed cartridge ever made.

It first appeared on the market in early 1895 when Winchester Arms Company announced it in the model 1894. This was the first American smokeless powder cartridge solely developed for big game. The big bore black powder cartridges were then at the peak of their development. Then started the big bore versus small bore controversy which still goes on today.

The country had been lumbered and the brush stage had not begun. Thus the ranges grew longer and the deer scarcer and wilder. With the old 45/70, 38/55 and 44/40 caliber black powder rifles, you were going full throttle at 100 yards as far as trajectory was concerned. With the new 30/30 you could stretch the range to 200 yards in a pinch. Contrary to the claims of the great killing power of the old black powder rifles, on deer at least, the 30/30 was a better killer on the average. Add these facts to a new rifle that was shorter, handier and lighter and it can be readily seen why the black powder rifles soon began to sing their swan song.

By 1914 over 700,000 Winchester model 94 rifles were sold and in 1927 President Coolidge was presented an elaborately engraved 94 model bearing the serial number of one million. In 1948 President Truman received number 1,500,000. This adds up that combined with the 44/40, these two calibers have killed more game than any other. Now consider that practically every major arms company in this country has turned out thousands more at one time or another, the total is staggering. For the benefit of G. I.'s who brought back German Drilling's or three barrel guns, if the rifle barrel is marked 7.62x51R it is our old 30/30 and a trip to the nearest sporting goods store will put you back in business.

Originally it was called the 30/30/160 after the fashion of the day. It had a 30 caliber bullet, a case capacity of 30 grains of black powder, and the bullet weighed 160 grains. The bullet moved along at some 1900 ft. sec. muzzle velocity. Contrast this with the modern loading of a 170 grain bullet at 2200 ft. sec. muzzle velocity and you can see how modern powders have souped it up.





PGC Photo by Parlaman

The modern hunter is entering the woods better and better equipped each year. Scope mounted rifles and even cooking equipment are used more than ever before.

Other modern loading is a 150 grain bullet at 2380 ft. sec. There was a 110 grain bullet with a muzzle velocity of 2720 ft. sec. This last is no longer commercially loaded but may be had from custom hand loaders. These light bullet high speed loads made good advertising for the loading companies but they sure handed some hunters a lot of grief in the field.

Most 30/30 rifles have lever actions in which the breech block is locked at the rear, so the cartridge is not too well supported to start with. Add to this a two-piece stock and a light weight barrel with a slot for a rear sight and sometimes forward for a magazine lug, and you have a perfect set up for vibrations. These barrels appear very sensitive to any change of vibrations such as a change of loads would cause.

Most 30/30s' are factory equipped with open sights that are difficut to adjust with precision. They are designed to take the abuse of hard going and stay put, the delivering fair accuracy on deer sized targets at medium range. Now quite a chunk of 30/30 owners are decidedly short on ballistic knowledge and seldom sight in their rifles. So our hunter buys himself a box of high speed, profoundly impressed with the bright colored advertising. Without further ado, he hies himself to his favorite deer watch and proceeds to miss the best buck he has seen in years.

My experience with the 30/30 has been that they will give pretty fair accuracy with one weight bullet, although I never did see one handle the 110 grain bullet too good. But a change of bullet weight seems to raise hob with the point of impact. I never had much use for lighter than 170 grain bullets in the 30/30 as you cannot drive them fast enough to make them break up on side shots and they do not have reliable penetration enough for raking rear shots. How much killing power the 30/30 has is a question that has been booted around for years. Some hunters swear by it and others claim it wounds more game than it kills. To try to get an answer let's look at the performance record of various cartridges which the writer has kept for 45 years. I have killed eight deer with the 30/30 and have observed about 70 more that I made

notes on. Approximately one-third of the latter were killed with the 32 special which for all practical purposes is the same thing. Eliminating spine and brain shots, which gives immediate results with even the 22 rim fire long rifle cartridge, let us examine the reaction of deer on being hit with the 30/30 cartridge.

Of the eight personally killed only one went down in its tracks and STAYED down. This was a high shoulder shot that seems so deadly on any game if the bullet penetration is sufficient. The rest all shoulder shots, ran from 25 to 200 yards. Two of the remaining seven went down to the shot but got up and ran a short distance.

Of the kills by others only six went down and stayed and they were all high shoulder shots. The rest that stayed down were all spine or brain hits. The majority of the kills were one shot shoulder jobs or to be more accurate a one hit performance. Some had two or three hits which of course reduced to conjecture whether the fatal hit was the first or the last, which would make quite a difference in the deer's reaction. Only one known shot in the chest cavity was lost. This because the hunter thought he missed and failed to go and take a look. We found the bloated carcass (a nice eight point) on a drive, two days later in the same spot. The buck went about 150 yards and provides a moral for us all.

With the 170 grain soft nose, raking shots from the rear seemed to have sufficient penetration to land in the chest cavity. The size of the deer and construction of the bullet determined exact performance. The old soft nose with the thin jacket is not too good on this shot. The jacket and lead core part company too often to be reliable, especially on large deer. The high speed lighter bullet will definitely lose too many deer on rear end raking shots.

On side shots the 170 grain bullet usually went clear through even on angle shots and generally gave a good blood trail. The wound channels were mostly good. Just how good depended on the amount of lead exposed and the thickness of the jacket.

The old long, lead-exposed, thin jacketed bullet was good as long as it did not shed its jacket, in which case it seldom went through the deer. It lacks the tissue destroying qualities of the ultra speed cartridges in the same circumstances which cause hemorrhage, nerve paralysis and usually quick death. Consequently an off center shot does not prevent the deer traveling considerable distance with little or no blood trail. A heavy jacketed, little lead exposed bullet may give you the same practical results. My vote goes to the fair amount of lead exposed, stiff jacketed, 170 grain bullet in this cartridge. Such a bullet expands, giving a good wound channel and the jacket holds the core, driving on through the deer. This gives a good blood trail on those not so good shots and is a better brush bucker than any high speed pointed bullet.

So it appears from the record, that in the hands of a fair shot, who can keep his shots forward of the diaphragm, will find the 30/30 very satisfactory on deer and black bear, up to 150 yards at least. It may not lay them in their tracks but neither will it be necessary to carry a can opener. For the hunter who believes that a barrage is a prime requisite for meat, when he does land he can expect quite a proportion of wounded game, which puts nothing in the pot.

But what ever the pro's and con's of the matter, one thing is sure. For some years to come, when dealers check their volume of ammunition sales, leading the parade will probably be—The Old 30/30.

. . . *The End*

Bow Hunting On A Budget

By Tom Forbes

VACATION plans in most families are formulated on compromises. The interests of each member of the family must be taken into consideration. Final choice often depends primarily on the amount of time available and the amount of money that has been set aside in the vacation budget envelope.

If your family enjoys a vacation in the mountains, there is no lovelier time of the year outdoors than the golden month of October. Crisp mornings, brilliant sunshine, and warm, comfortable afternoons make each day in the wooded wonderland perfect. Gone are the heat and insect pests that plague one in the summer time. The trees are decked in their gaudiest colors. Forest trails invite the hiker and the camera enthusiast as well as the bow hunter.

Off-season rates for cabins in Pennsylvania State Parks range from $12.00 per week for a small, one-room cabin with two beds to $24.00 for a three-room cabin with four beds. These cabins have no luxurious equipment or facilities, but electricity is provided as well as beds, mattresses, mattress covers, pillows, stove, table, and chairs. Firewood is furnished for the open fireplace and a source of pure water is conveniently located.

The temperature at night may drop to freezing in the northern section of the state and wool blankets and warm clothing may be essential for comfort. Several of the state parks have been opened to bow hunters during the past special archery seasons and, in general, the parks are located in close proximity to large tracts of State Game Lands, administered by the Game Commission for public hunting.



A system of well-built forest roads is maintained in the state parks and forests, offering exceptional opportunities to explore the forested areas by car. A Public Use Map of some of the state forests, showing the network of roads and hiking trails, has been prepared by the Department of Forests and Waters and may be obtained by writing the department at Harrisburg. In addition to the road system, the map shows location of fire towers, state game refuges, and scenic lookout stations. Sign posts have been erected at the intersections of forest roads and trails, giving mileages to various points and indicating places of scenic interest. With a copy of this map as a guide, an all-day motor trip may be planned through a state forest on well-graded roads where it is a common experience to see grouse flush from the road ahead of the car, gray squirrels scampering up a nearby tree at any time of the day, and, in early morning or late afternoon, you may even see deer around the next turn in the road on their way to feed.

The state highway system wisely follows the water routes in the valleys but the forest roads climb on easy grades to the highest ridges. Here Penns Woods take on their true meaning as you look out over wave after wave of trees. A fire tower standing stark against the sky on a distant ridge looks like the mast of a ship at sea. We look at our compass, orient the map, and locate the tower. To our surprise it is more than fifteen air-line miles away.



Photo by the Author

Bow hunters who desire accommodations at State Forest Parks in October are urged to make application early. Cabin facilities are limited and demand in some parks is heavy.

Below our lofty perch one of the many species of hawks native to Pennsylvania soars over a wooded valley; its flight effortless as it rides the thermal currents flowing up the mountain slopes. In the immediate foreground and almost a thousand feet below us the narrow thread of a state highway, shining in the sunlight, leads through a covered wooden bridge on the outskirts of a village whose houses in the distance look like small white doll houses. A look at the map and we realize that we bought gas at the village gas station only a short hour ago. In our imagination the highway becomes an Indian path and the village a collection of thatched roof huts. Thus it must have appeared to a member of the mighty Iroquois nation armed also with a hunting bow as he gazed at the scene spread out before us.

For the sole use of the bow hunter the Pennsylvania Game Commission has set aside two archery preserves where hunting in any open season is restricted to the use of the bow and arrow. A nine hundred eighty-five (985) acre preserve in Forest County is located near the village of Mayburg on State Highway Route No. 666. The nearest park cabins available are located in Cook Forest State Park about twenty (20) miles south of the preserve. In Sullivan County the archery preserve is located on State Game Lands No. 13 and about four (4) miles south of the village of Nordmont on Highway Route No. 154. Worlds End State Park is approximately twenty (20) miles North of the preserve.

Located within the boundaries of Pennsylvania are twelve state parks which have cabin facilities. The location of the parks and also of the state forest lands is shown on a map compiled by the Department of Forests and Waters entitled "Penn-

LOST

A white, male setter on November 1, 1953 in Cameron County. Reward. Notify Dr. C. E. Tibbins, 535 Washington Trust Building, Washington, Pa.

sylvania State Forests and Parks." Request for a copy of the map which is free should be made to the Secretary of the Department in Harrisburg.

If you intend to make your headquarters in one of the park cabins for the October special archery deer season you should also provide yourself with a "Sportsmans Map of Pennsylvania." This map is published by the Pennsylvania Game Commission and shows in color the location of the State Game Lands, State Game Refuges, in addition to the State Forests. The map sells for fifteen cents a copy and may be obtained by writing direct to the Pennsylvania Game Commission at Harrisburg.

A portfolio containing the maps enumerated in this article will provide you with first hand information on all public state recreational and hunting lands in the vicinity of the state park in which you locate. With a good pocket compass you can travel with confidence and need not confine your hunting to the land adjacent to the state highway routes.

To secure a cabin in a state park for the October bow and arrow deer season write to the Department of Forests and Waters at Harrisburg and request a "Cabin Rental Application Blank" and a copy of the "Cabin Renting Regulations." A list of the State Parks in which cabins are available will be sent to you along with the application. It goes without saying that the number of cabins available is limited and application should be made at once. There are a total of 171 cabins in the state parks and a number of these cabins have been available during the past special archery deer seasons. Application may be made anytime after January 1st for the current year. The author has used these cabin facilities the past two special archery deer seasons. During 1952 two of us occupied a single room cabin in Parker Dam State Park in Clearfield County for a one week period. The mental picture I retain of a flock of twenty-eight wild turkeys moving slowly across a woodland stage lighted by the afternoon sun filtering through the trees and the antics of two beavers busily engaged in building a dam on a small brook are highlights of that trip. There are a number of cabins in the park and ours was the only one occupied during that week in October. The past special season the author was one of a party of four who occupied a two room cabin in Worlds End State Park in Sullivan County. Total expense for food, lodging, and transportation was less than twenty-five dollars a piece in each instance.

In this day and age a better buy, vacation-wise, would be hard to find.

. . . *The End*

The little ruby-throated hummingbird summers in the United States but spends his winters around Central American and Yucatan. Although his wings measure just over an inch in length, he can beat them about 75 times a second and is able to make a non-stop flight of some 500 miles across the Gulf of Mexico.

? ? ? ? ?

The April GAME NEWS

Off-Season Care Of Equipment

By Larry J. Kopp

PROPER care of trapping equipment during the off-season is just as important as the correct handling of fur pelts during the trapping season. Much has been said about the loss of profit as a result of improper care for raw furs. But little attention has been shown to the importance of proper care for equipment after the season is ended.

Off season care of trapping equipment begins as soon as all traps have been brought in from the field and stream. Each trap should then be checked carefully for defects such as excessive rust formations, weak springs, missing trap pans, wobbly pan action, missing name tags, broken trap jaws, and a few other points including the correct adjustment of the ear which holds the trigger or dog.

While this thorough check is being made, all traps should be placed in groups according to size, or according to the animal they are used for. In other words all muskrat traps should be placed together in one bunch. Fox traps should be taken care of in a separate group, and so on down the line. In this way each particular type of trap will be ready for use when another season rolls around without spending hours in untangling them from one bunch of all assorted sizes.

As soon as all defective traps have been culled out of the entire collection, they can be repaired immediately, or if this is not possible they should be stored in a dry place until later when a few spare hours can be put to good use in repairing them.



It is a strange thing, but I have often noticed that trappers can sometimes display a complete lack of respect when it comes to off season care of traps. In some cases I have seen them thrown on a pile in a damp place where they looked more like a pile of scrap than a trapper's most important possession. At other times I have seen trappers place their tangled mess of traps and chains into a burlap bag which they dumped haphazardly upon the ground in the garage or coal bin, or some other out of the way place.

Under no circumstances should traps be stored in a damp or moist place. Instead, they should be hung up and tied together with wire in bunches of two or three dozen, in a dry and slightly airy place.

Before hanging up your traps for the season it is a good idea to treat them the same as you would just prior to the open season by cooking them in a solution of water and a handful of bark taken from wild maple trees. It is not necessary to wax your traps until next trapping season when treated in this manner, since they will rust very little if at all.

Treating traps in this manner is particularly recommended for traps which have coil springs such as are found on some stop-loss muskrat traps, and on fox traps. Rust soon causes such coil springs to become weak and ineffective long before the other parts of the same trap become useless.

While it is true that new traps are coated with oil in order to pre-

vent excessive rust, it is not a good idea for the trapper to oil his traps. Traps should not be painted with coal oil or any other oil or grease. Neither should any working or moving parts of a trap be oiled. Such oil, regardless of what kind, has an unnatural odor and serves only to alarm "hard to trap" animals.

Many trappers may not know it, but any and all broken or missing trap parts can be purchased at reasonable costs from the manufacturer of the trap, or perhaps from one of the many trapper supply dealers scattered throughout the State. A postal card addressed to the trap manufacturer or supply dealer will bring you a list of the various trap parts and their individual cost.

Another idea would be to make a list of all broken or missing parts, then mail this list to the manufacturer or supply dealer together with full information as to name and size of the trap for which each particular part is wanted. You will then in turn be advised whether the parts are available, and what the cost will be.

Repairing traps requires no special tools. Common tools which you will need include a wire brush or an old file to remove excessive rust from traps; a screwdriver; small hammer used for riveting; pliers; and perhaps a pin punch for punching out old rivets.

When new parts are to be attached to the trap it is a good idea to closely examine a good trap of similar make in order to learn exactly how the new part must be placed.

When attaching new trap pans, or when readjusting wobbly pans, extreme care must be observed so as not to make them too tight. It is best to check the pan action frequently while punching the rivet so that the pan action works smoothly after the rivet has been set. An even better idea would be to obtain some small nuts and bolts with which to attach trap pans. With these, the pan action may be adjusted exactly as one wants it, without fear of making it too tight.

DON'T BE FOOLED . . .

GET THE APRIL GAME NEWS

Some fox traps feature such adjustable trap pans direct from the factory. By holding the small nut with a pliers, and using a screwdriver to turn the bolt such pan action can be adjusted when rust prevents one from holding the nut with the fingers.

Among other adjustments would be that of adjusting the ear which holds the trigger. This can be bent towards the trap or away from it with a pliers so that when the trap is set, the pan will be level with the trap jaws. Here too, care must be observed so as not to bend the ear too far either way. It is best to check the trap frequently by setting it, and examining it closely after bending the ear just a trifle. Sometimes only a very little pressure is needed in order to adjust it correctly.

Other trapping equipment should also be properly cared for during the off season. Both wire or wooden fur forms should be stored in a dry and preferably airy place. In the case of fox fur forms, it is a wise idea to melt some paraffin or beeswax and with a small paint brush apply a thin coating of wax along the edges of the boards, particularly along the shoulders. This will allow you to remove fox pelts from the form more easily. Another tip is to dip your bottles and jars of unused bait and lure into melted wax, top first of course. This will seal the contents airtight, and thus preserve its full strength until another season.

. . *The End*

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
WILBUR M. CRAMER ..... *Asst. to Exec. Dir.*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

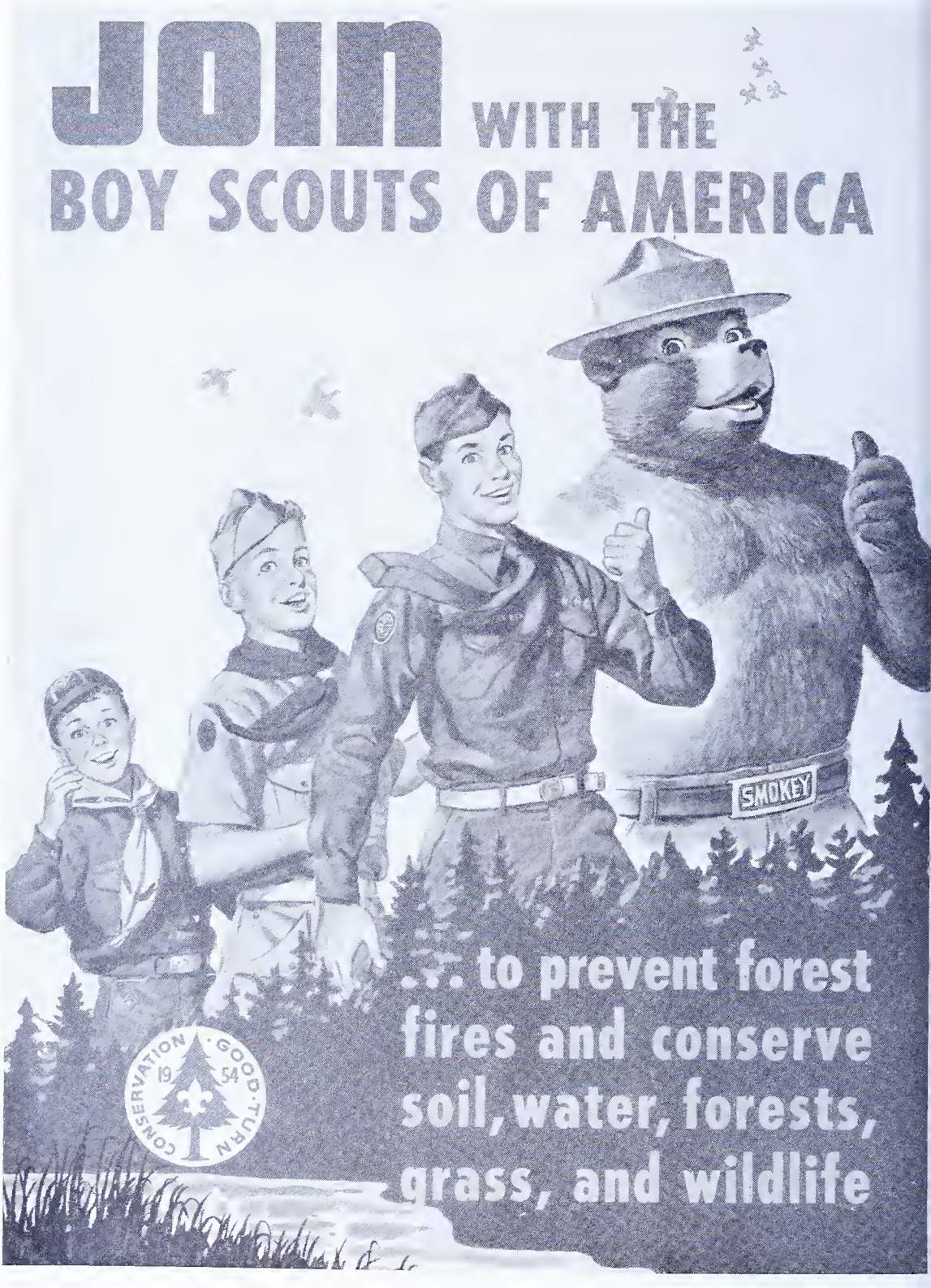
NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.


JOIN WITH THE
BOY SCOUTS OF AMERICA
SMOKEY
. . . to prevent forest fires and conserve soil, water, forests, grass, and wildlife
CONSERVATION · GOOD TURN
19 54

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

PENNSYLVANIA

Game News

25th Anniversary

APRIL 1954



P38.34
1.6



THE STORY BEHIND THE COVER

TWENTY-FIVE years ago this month a rural mail carrier drove his Model T Ford along the tarred highways and muddy byways of the Keystone State to deliver, somewhat to his pleasant surprise, the first issue of a new magazine. It marked the beginning of a bold and daring venture by the Pennsylvania Game Commission—one they hoped would "inaugurate a system of cooperation that will function for the best interests of game protection throughout our great Commonwealth."

Remember 1929? Remember the flivvers, flagpole sitters, sheiks and flappers, prohibition and prosperity? It was the year of the first commercial air voyage around the world in the Graf Zeppelin, the start of success for a little, animated mouse named Mickey—the year that talkie movies began to fascinate theater-goers. In 1929 people were talking about Rin Tin Tin, Will Rogers, Bobby Jones, Sophie Tucker, Texas Guinan, Clara Bow, Chris Cagle, and Albie Booth. It was near the end of the Gay Twenties—the year the bottom fell out of the boom on a Black Tuesday.

GAME NEWS was born in the Golden Age of Sports—a decade which produced what many still consider the all-time greats in particular fields. There were Babe Ruth, Bill Tilden, Jack Dempsey, Tommy Hitchcock, Red Grange, Johnny Weismuller and many more. Then, as now, Americans were famed for their sports enthusiasm, their spirit of sportsmanship, and their will to win.

For twenty-five silver years the PENNSYLVANIA GAME NEWS has told the story of the oldest sport in the greatest Commonwealth of the World. It has always championed outdoor sport, fought for its improvement, for courtesy and respect between the participants, and for care and protection of the contestants. Like the number and type of sportsmen afield in Pennsylvania, GAME NEWS has grown through the years. It started as a simple, mimeographed Monthly Service Bulletin, was first printed in 1932, and today is recognized as a leader in its field.

The faithful postman who carried the NEWS to a few hundred Pennsylvanians a quarter century ago still travels the same course, still makes his appointed rounds. But like his uniform, his means of transportation, and the road over which he travels, the NEWS he carries in 1954 has been vastly changed and modernized to meet mid-century conditions. Only the same basic message—the primary purpose for publishing this particular magazine—remains constant.

The PENNSYLVANIA GAME NEWS will always maintain the future of our economic prosperity, national health, and moral strength depends largely on how well we use and manage our natural wealth—our soils and waters, our forests and wildlife.

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 4

Silver Anniversary Issue
April, 1954

CONTENTS

Then and Now—
A 25 Year Summary 4
25 Pennsylvania Wild Animals . 17
25 Field Notes Through the Years 27
25 Questions Often Asked About The Pennsylvania Game Laws 35
25 Pennsylvania Birds 39
Introducing—
Your Game Commission 49
Pennsylvania's Hunting Record Then and Now 69
The Story Behind Game News . 75

★

Cover Painting
By
Ned Smith

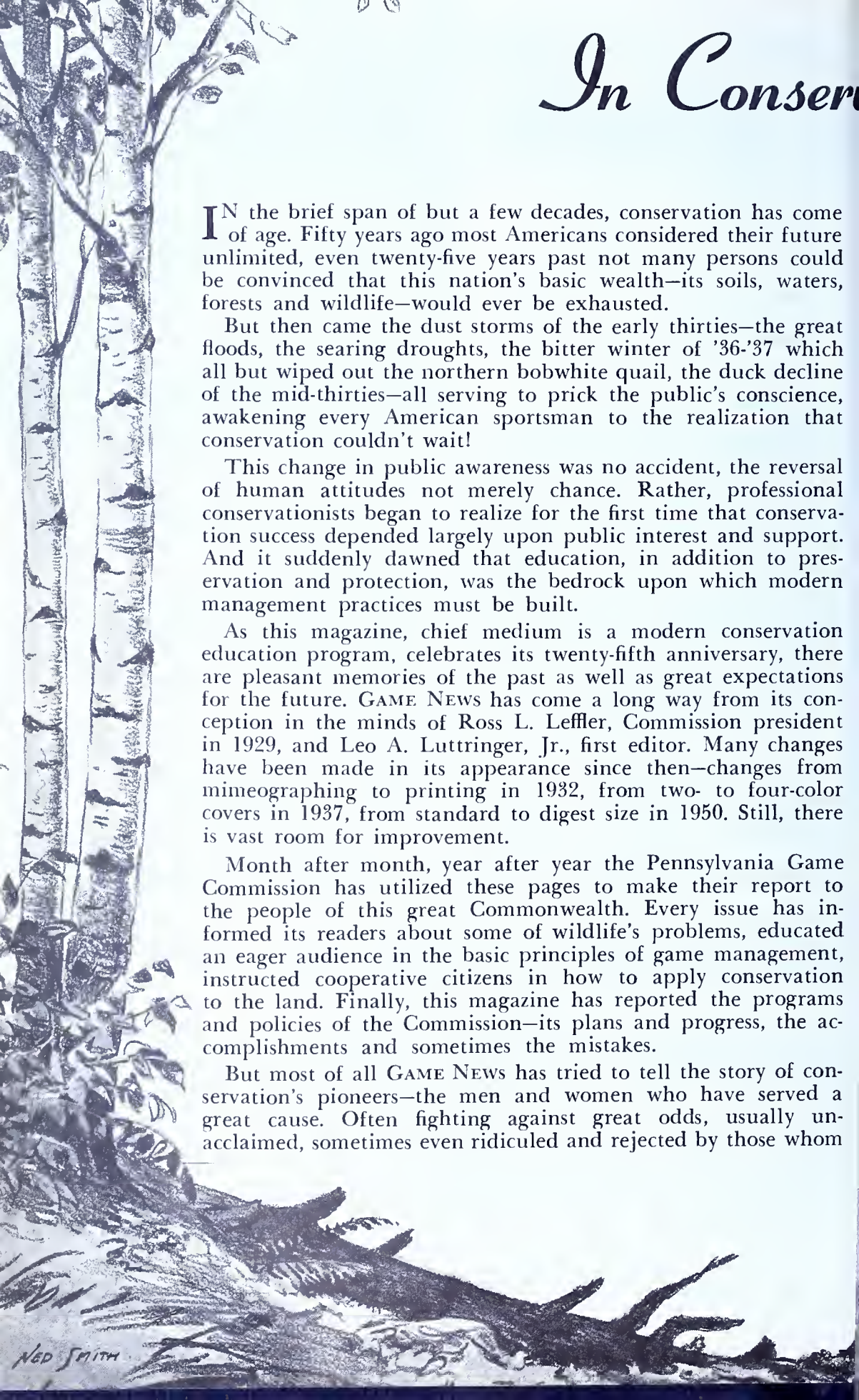
PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



In Conser

IN the brief span of but a few decades, conservation has come of age. Fifty years ago most Americans considered their future unlimited, even twenty-five years past not many persons could be convinced that this nation's basic wealth—its soils, waters, forests and wildlife—would ever be exhausted.

But then came the dust storms of the early thirties—the great floods, the searing droughts, the bitter winter of '36-'37 which all but wiped out the northern bobwhite quail, the duck decline of the mid-thirties—all serving to prick the public's conscience, awakening every American sportsman to the realization that conservation couldn't wait!

This change in public awareness was no accident, the reversal of human attitudes not merely chance. Rather, professional conservationists began to realize for the first time that conservation success depended largely upon public interest and support. And it suddenly dawned that education, in addition to preservation and protection, was the bedrock upon which modern management practices must be built.

As this magazine, chief medium is a modern conservation education program, celebrates its twenty-fifth anniversary, there are pleasant memories of the past as well as great expectations for the future. GAME NEWS has come a long way from its conception in the minds of Ross L. Leffler, Commission president in 1929, and Leo A. Luttringer, Jr., first editor. Many changes have been made in its appearance since then—changes from mimeographing to printing in 1932, from two- to four-color covers in 1937, from standard to digest size in 1950. Still, there is vast room for improvement.

Month after month, year after year the Pennsylvania Game Commission has utilized these pages to make their report to the people of this great Commonwealth. Every issue has informed its readers about some of wildlife's problems, educated an eager audience in the basic principles of game management, instructed cooperative citizens in how to apply conservation to the land. Finally, this magazine has reported the programs and policies of the Commission—its plans and progress, the accomplishments and sometimes the mistakes.

But most of all GAME NEWS has tried to tell the story of conservation's pioneers—the men and women who have served a great cause. Often fighting against great odds, usually unacclaimed, sometimes even ridiculed and rejected by those whom

...n's Cause

they sought most to serve, these employees and members of the Pennsylvania Game Commission leave a great tradition for all to follow. While it would be impossible to name individually every member of this valiant band, it is really the story of their lives, their hopes and their ideals that GAME NEWS commemorates this month.

And it is to the following named representatives of these conservationists that this issue of the PENNSYLVANIA GAME NEWS is respectfully dedicated:

To the late John M. Phillips, of Pittsburgh, and John Q. Creveling, still living in Wilkes-Barre, representatives of all those members of early Game Commissions who fought wildlife conservation's first battles and won significant victories . . .

To these members of the Pennsylvania Game Commission who died while actively serving the sportsmen of the State during the past 25 years . . .

Frank D. Foster	Robert Lamberton
Dr. H. E. Kilgus	Dr. Carl B. Rosenkrans

To these salaried employees of the Game Commission who died while on active service during the past 25 years . . .

Edwin W. Carpenter	Game Protector
William J. Davis	Field Division Supervisor
Paul N. Ebersole	Title Clerk
Roy V. Eckert	Accountant
Joseph M. Foreman	Game Protector
William D. Foote	Game Protector
Charles A. Hiller	Chief, Division of Game Purchases & Distribution
Joseph P. Kennedy	Game Protector
James B. Lightner	Game Protector
Philip H. Melching	Game Protector
Walter M. Middleton	Game Protector
Frank A. Myers	Field Division Supervisor
Ralph E. McCoy	Game Protector
Russell A. McCachran	Director, Field Management Bureau
Lynn B. Rosenkrans	Conservation Education Assistant
John B. Ross	Field Division Supervisor
Elmer B. Thompson	Game Protector
Doris Truckell	Stenographer
Judd C. Turner	Assistant Executive Director
H. J. Updegraff	Game Protector
David A. Zufall	Game Protector



This anniversary issue presents a review of a quarter century of wildlife conservation progress that has occurred during the lifetime of the GAME NEWS. The GAME NEWS of today was little more than a mimeographed Newsletter in 1929. At that time it went only to a meager mailing list. Today the magazine has an enviable reputation as a conservation publication and is sent monthly to more than sixty-five thousand subscribers.

GAME NEWS has recorded during the past twenty-five years the problems and achievements of the Pennsylvania Wildlife Conservation effort. The stories, articles and reports between the covers of the many issues gives a clear picture of the results over the years of a program supported, fought for, and requested by millions of people in the Keystone State.

Before we review some of the specific highlights of this history there are several gross differences between then and now. In 1929 there were only about 509,926 licensed hunters as compared with nearly one million sportsmen today. In 1953 about six times as much money was spent on propagation of game as in 1929. About five times as much money is being spent on land management today as was spent then. The Conservation Education budget is twenty-four times greater in 1953 when compared with 1929. The law enforcement budget then was the largest expenditure and although at present it is not the greatest financial item it is approximately double that of 1929. And so it goes—a continual increase of hunters with a bigger and costlier job to be done.

Keeping pace with these increased demands naturally required and expanded all around program. More lands had to be acquired. From 145,407 acres in 1929, holdings increased to 902,179 acres in 1953. Some of these acquisitions are important and large enough to mention separately. For example in May 1949 the U. S. War Department deeded 14,000 acres of the Tobyhanna Military Reservation, Monroe County, to the Commission for wildlife management purposes. In 1951 the U. S. Soil Conservation Service turned over about 5,000 acres on a 99 year lease; and



in 1953 the Secretary of the Army made available a tract of over 7,000 acres under a 25 year license for wildlife management purposes and public hunting in Indiana and Westmoreland Counties.

But acquiring lands was only part of the story. Improving them was even more important. The wildlife which lived on them had to be fed; it had to be protected from winged, four-footed and even two-legged predators, and from fire. Twenty-five years of this kind of home-building and mouth-feeding required more time, money and effort every year as more refuges, roads and fire trails had to be maintained for protection, food and cover. During this period game feeding costs alone amounted to $550,000; 25,000,000 seedlings and 600,000 grape cuttings were planted and an additional 5,100 acres were cleared.

Conditions for small upland game were further improved by adopting modern soil conservation practices. Under this program, established in 1947, 50,000 acres on State Game Lands and Cooperative Farm-Game Projects were improved. The Cooperative Farm-Game Program was launched in 1936 to better game conditions in farming regions, to open more hunting territory in many large centers of population, and to give landowners protection from unscrupulous hunters. This program became so popular that it now includes twenty-seven counties and involves 1,048,145 acres, nearly all of which are open to public shooting. Lack of funds is all that prevents the expansion of this undertaking.

As the management program developed waterfowl also was taken into consideration. Pennsylvania's first waterfowl sanctuary was established in 1935 on the upper lake of the famous Pymatuning Reservoir in Crawford County. In 1938 a splendid museum located within the area, containing all waterfowl and shorebirds that occur within the Commonwealth, was opened to the public. It attracts thousands of visitors annually from every state and many foreign countries.

The creation of the Pymatuning Reservoir and its early accomplishments stimulated great interest in

waterfowl restoration; so much so that in 1948 a statewide project of propagation and habitat improvement was inaugurated under the supervision of a Special Waterfowl Coordinator. This program includes the construction of impoundments, improved food and habitat conditions, the stocking of ducklings and the erection of wood duck nesting boxes, over 2500 of which were placed on the Game Lands since the program become operative.

Many impoundments were constructed before the 1948 program was established. During the depression period when relief help was available, many dams, both small and large, were constructed on the Game Lands. Typical of these are Lake Warren, a 37 acre impoundment in Bucks County which was built during 1934 to 1936; the J. Q. Creveling Lakes in Wyoming County containing 10, 22 and 25 acres which were respectfully dedicated to the member of the Commission whose name they bear; a 112 acre dam called Cranberry Glade Lake in Somerset County; and the 40 acre Aldermarsh Dam in Wayne County.

Hal Harrison Photo





Hal Harrison Photo

The great success of a long-range planting program in the Pymatuing Refuge, Crawford County, is seen here as Game Protector Ray Sickles inspects a new growth of smartweed, planted for waterfowl. The refuge was established in 1935.

The intervening years did not ignore big game or the proper management of it. Forest cuttings amounted to more than 42,000 acres. These cuttings encouraged new sprout growth, providing cover and food for forest game. Timber sales, first authorized in 1936, also improved many thousands of additional acres and returned an income to the Commission.

So important did the forest management phases of the wildlife program loom in the eyes of both the Commission and U. S. Forest Service, that in August 1949 a state-federal agreement was signed for a joint wildlife management project on the half million acre Allegheny National Forest.

Not all of the lands acquired or the management thereof are financed by the hunter's license money. A valuable ally came to the rescue in 1937 when the Federal-aid-in-Wildlife Restoration Act (Pittman-Robertson) was passed. The Commission's first allocation of this major appropriation amounted to $46,000 beginning July 1, 1938. From that time to this a total of $3,778,484 has been spent by the Commission through this special grant. This money aided materially in financing restoration projects and in obtaining and developing State Game Lands and cooperative farm-game projects.

The year 1937 also witnessed the first tangible move to provide archers with special hunting areas. Two archery preserves were established—one on Game Lands No. 13 in Sullivan County, the other on the Allegheny National Forest in Forest County.

As federal funds helped the Commission to do a better wildlife restoration job, so did the relief labor provided under the CCC, CWA, WPA, NYA, DPA and others from 1933 to 1943 inclusive.

The story thus far has concerned principally the things which have been done to improve conditions for wildlife—homes, food and cover. The next part of the story is the sequel to the fine hunting and recreation the improved and expanded program provided. As wildlife increased the number of hunters likewise in-

The Loyalsock State Game Farm, established in 1929, is typical of the vast program maintained by the Commission to provide game for restocking depleted hunting grounds. In 1930 only 6,610 pheasants were produced on state game farms; in 1953 they produced 71,170 ringnecks.

The Day-old Pheasant Chick program started in 1933 has attracted great interest in conservation. Farmers and sportsmen's clubs have cooperated fully in this unique program. Proof of its popularity is indicated by the 180,000 pheasants successfully raised in 1953.







The Rabbit Trapping and Transfer Program started in the winter of 1937-38. The sportsmen shown above enthusiastically participated in large scale rabbit drives in areas closed to public hunting, thus helping to prevent rabbit damage and provide more recreation.

creased. People generally became more outdoor minded. More paved roads carried them to the best hunting areas in modern automobiles, finer weapons and improved ammunition enabled them to hunt their quarry with better chances of success.

As these factors became more pronounced, it was necessary to supplement Mother Nature's supply of wildlife. Ringneck pheasants, which had been introduced only a few years before, were gaining a foothold in southeastern Pennsylvania. Realizing the birds were here to stay, the Commission encouraged its Refuge Keepers to propagate them with the help of broody chicken hens. That was in 1928.

A year later the Commission purchased and established three Game Farms, two for raising pheasants and one for raising wild turkeys. Later, in 1932, a bobwhite quail farm was added. The location of some of these farms was changed in the ensuing years, but that is of no particular importance at the moment. What is important is the production figures at the farms 25 years ago compared with what they are today. In 1930 the output was 6,610 pheasants and 38 wild turkeys. In 1953 they produced 71,170 pheasants, 10,077 quail and 6,192 turkeys. In the same year the Commission also released 41,645 pheasants obtained from commercial dealers, and 7,104 mallard ducks which were raised and released by its own employes.

An outcropping of the pheasant propagating program developed into one of the most cooperative undertakings the Commission ever attempted—the Day-old Pheasant Chick Program. Following its inception in 1933, and for a few years thereafter, not too many sportsmen's organizations were interested in raising the youngsters. But all of a sudden the program avalanched almost over night and there were times—and still are—when the Commission could not accommodate the numbers of interested applicants. Proof of the popularity of this program, which binds the Commission so closely with the sportsman and the farmer, is evidenced by the number of chicks (180,000) which were raised and released at twelve weeks of age by those groups in 1953.







Another program which had its birth during the twenty-five year period was the Rabbit Trapping and Transfer Program in the winter of 1937-38. Its aim was to remove surplus cottontails from towns and other areas closed to hunting and release them where public shooting is permitted. More recreation was provided on the one hand, and damage to gardens, fruit trees and nurseries was greatly curtailed on the other hand. But best of all, it brought the Commission and the people closer together and provided an attractive cash return to all who participated in the program. Since its origin 563,042 rabbits have been trapped and transferred under this joint undertaking.

It is difficult to evaluate the effect of this vast restocking program in relation to the kill of wildlife through the same period, for the simple reason that many destroyers other than the shotgun took great toll. Undoubtedly much of the game which was stocked fell prey to winged or four-footed predators. Many were killed by automobiles or destroyed by fire and mowing machines. In spite of such adverse conditions, much has been accomplished. Let us cite just two examples. The kill of pheasants increased from 212,082 in 1929 to 452,915 in 1953. The annual harvest of turkeys jumped from 3,834 to 14,604 during the same period.

As every cloud has its silver lining, so does every story have its tale of woe. No catastrophe was greater than the loss of our quail during the severe winter of 1935-36. That long, hard period of deep snows almost wiped bobwhite off the Pennsylvania landscape. An average annual bag of 170,000 for the preceding ten years began to drop rapidly so that in 1945 only 12,000 were taken. Two years ago (1952) a paltry harvest of 6,978 birds offered mute testimony to their decline and a statewide



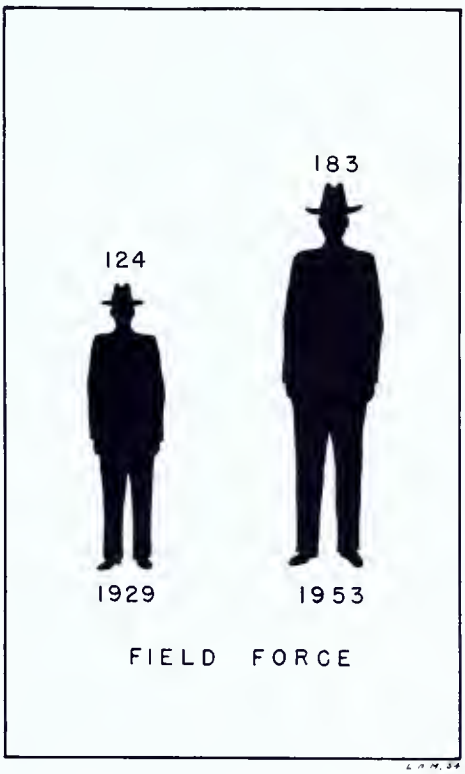
The Commission's in-service training program for its employees has produced the highest type of public servant. In the old days frequent Field Conferences, such as the one the officers shown above attended at Mt. Gretna in 1930, highlighted the program.

closed season prevailed in 1953.

In order to cope with the rapid changes and wider diversity of conditions, the Commission decentralized its field administrative force and provided for Field Division Offices geographically located in various sections of the state. It also established a permanent Training School for Game Protectors, the first in the United States (1936) to better equip in-service and future officers with the knowledge required to meet the changing conditions, and to deal intelligently with a more enlightened public. Seven student classes comprising 161 officers have graduated from the Training School.

Actually an epic in the lives of our field officers took place in the last quarter of a century. Their whole philosophy underwent a remarkable change to keep pace with modern progress, and even the old timers measured up to the need for diversification, though most of them were dyed-in-the-wool law enforcement officers. Proof of this is borne out by the fact that the Game Protector today must be an administrator, law enforcement officer, wildlife manager, public relations expert and an educator all wrapped up in one.

One important factor made the Protector's lot easier. The Game Law was recodified in 1937 to conform with the conditions influenced by improved transportation methods, increased hunting pressure and changes in game habitat resulting



from agricultural practices and the growing up of our forests.

The present day Game Protector is not only mentally and physically able to do a much better job, he has the best uniforms and equipment that can be obtained. His service implements include side arms, field glasses, snow shoes and farming and forestry equipment. He has been given water crafts and motors for the efficient patrol of waterways where the proper administration of waterfowl and furbearing animals is essential.

Today a staff of 183 field men, not including those employed at the Game Farms (or 300 per diem employes who work on the Game Lands under expert supervision) are administering a big business enterprise.

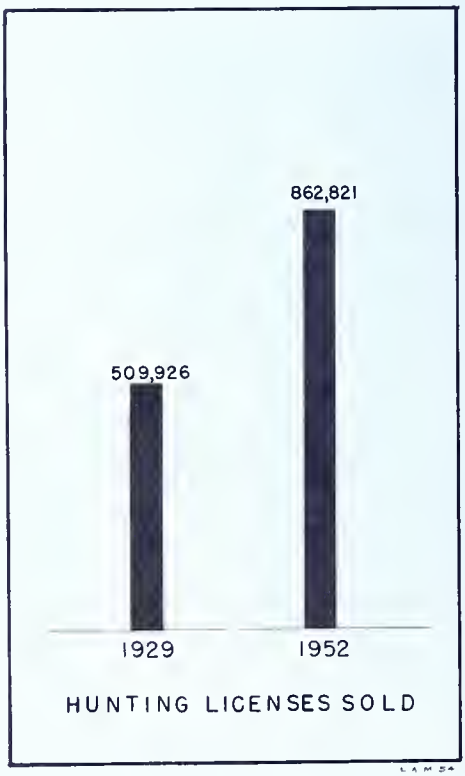
By increased business we mean a rise in the number of licensed hunters from 509,926 in 1929 to 861,647 in 1953, an increase of 351,721; we mean the increase in game land holdings from 145,000 acres to 902,000 acres; we refer to a more conservation minded public which clamored for more educational service; an expanded propagation program; increased law enforcement; and many other factors which placed more burdens and responsibilities in the field.

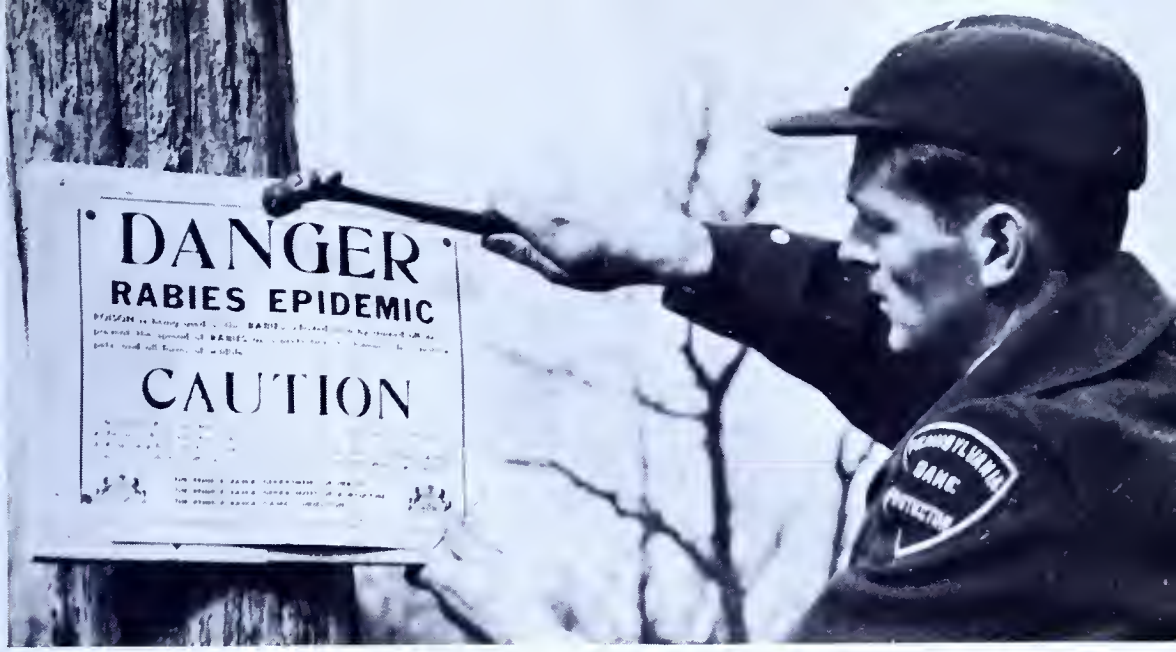
The management of the furbearing animal population has gone hand in hand with the general wildlife habitat improvement program. As a result the animals are a major factor in our wildlife economy. Their monetary value is governed almost entirely by the fur market.

Predators, numerically speaking, have been controlled primarily through bounties, especially when the fur market is low. Bounty payments in 1929 amounted to $160,000 only $27,000 less than in 1953 when payments amounted to $187,000. On the whole the two figures infer that there were nearly as many trappers in 1929 as there are now. Trappers have been the mainstay in controlling predators and some of them have been conscientious and sincere in this responsibility, even when market prices did not warrant their effort for the bounty alone.

During the 25 year period from June 1, 1928 to May 31, 1953, a total of 571,824 bounty claims were paid, requiring an expenditure of $2,716,280. These payments covered the killing of 1,620 wildcats, 295,286 gray foxes, 147,256 red foxes, 935,275 weasels, 2,980 goshawks, and 15,325 great-horned owls.

Sometimes severe predator control measures are necessary, either to combat a sudden increase such as occurred during World War II, or when a species is threatened with disease as was the case during 1951 when an epidemic of rabies in wildlife, especially foxes, occurred. The epidemic included northeastern and southeastern Pennsylvania and certain smaller areas in the northwest-





The successful anti-rabies campaign in which Commission personnel cooperated with the Departments of Health and Agriculture during 1952 focused public attention on the importance of sound wildlife management.

ern part of the state. A campaign to curb the dread infection was inaugurated early in 1952. By this time a number of humans had been attacked by rabid foxes. The loss to dairy cattle and other domestic livestock reached alarming proportions. After several meetings were held with representatives from the Department of Agriculture and Health and the course of action agreed upon by the Department of Justice, the administration endorsed it. The campaign was successful and the large population of foxes, skunks and opossums was reduced to a minimum in those areas, and the number of positive rabies cases have been almost nil since the project ended.

As the work of the Commission expanded to meet the needs and desires of the sportsmen, people began to take more notice of wildlife and its importance. They began to evaluate it in terms of its economic and recreational benefits and to clamor for more knowledge about it. Efforts were made to provide various types of information to meet the demand even before 1929; however only a few publications were available. It was then that Ross L. Leffler, who was president of the Commission at the time, conceived the educational instrument which we are now commemorating on its 25th anniversary—THE PENNSYLVANIA GAME NEWS. This publication spearheaded an educational program which has grown in stature with the years.

By 1946 the demand for lecturers and visual aids was so great the Commission assigned a representative to each of the six field divisions to administer this program at the local level. From one motion picture in 1929, the library has grown to include a wide variety of subjects in color and sound. Copies of these films are available at each field division headquarters to better serve the sportsmen and the public.

The Commission has constantly directed its efforts toward youth education in conservation and in 1948 established jointly with the Department of Public Instruction a statewide Project of Wildlife Habitat Improvement for the Future Farmers of America including $1,000 for prizes. At this moment it is backing to the limit the Conservation Good



PGC Photo by Cady

The future of hunting and conservation in Pennsylvania lies in the hearts and hands of youth. Conservation education, almost unknown in 1929, has made tremendous growth in the past quarter century. Today, Commission personnel are cooperating in every way possible with youth organizations throughout the Commonwealth.

Turn for 1954 of the Boy Scouts of America.

Subsidies through the years have also been granted other agencies engaged in conservation education activities such as the Conservation Laboratory for Teachers at the Pennsylvania State University, State College; the Carnegie Museum, Pittsburgh; the Academy of Natural Sciences; Philadelphia; and the Forensic League of the University of Pittsburgh.

In 1948 another fine youth movement was established through the joint efforts of the Pennsylvania State University and the Pennsylvania Federation of Sportsmen's Clubs. Known as the Jr. Conservation Camp, it has successfully planted conservation attitudes in the minds of hundreds of youngsters and has equipped them for leadership in this field. The Commission has supported this program, along with many other groups, through instruction and visual aids. Indications are that the Federation and the University, along with the Women's Clubs, may sponsor a girl's camp in the near future.

You can well see from the foregoing how progress and expansion can create demand. Every activity of the Commission has developed so rapidly in the past 25 years that they can only be interpreted through a comprehensive and continued educational program.

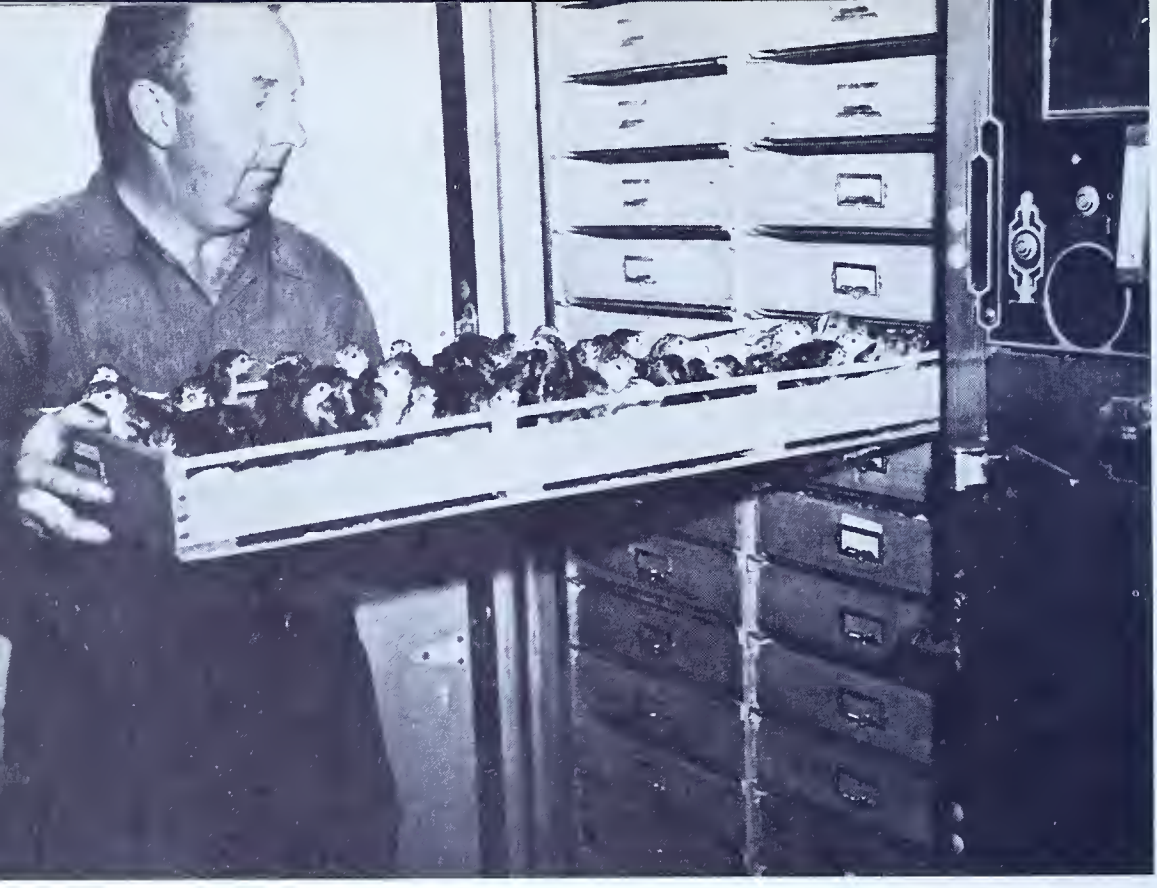
Wildlife research, which was first recognized as a separate and specialized function by the Commission in 1927, was limited to a few field surveys primarily because of a lack of funds. When funds were made available through Federal Aid in 1938 the program developed rapidly and many ecological and biological problems were studied and investigated.

An outstanding example of wildlife research in action has been the development of a superior wild turkey for restocking purposes through selective breeding. In 1938 the northern range of this noble bird extended from the Maryland line to southern Clearfield County. In the following ten years much of the forest growth over northern Pennsylvania attained an age that fulfilled the requirements of the wild turkey. When this enormous area became suitable turkey habitat, research made available a bird which has resulted in the extension of the turkey range over much of Pennsylvania all the way to the New York state line in a very short time.

Wildlife Research played an important role in analyzing the deer problem. Studies revealed the deer carrying capacity of our forests at different age classes. For instance, in a cut-over area three to four years old it takes but two or three acres to carry a deer the year round. In over-crowded areas, it takes about 75 acres of a 40- 50-year-old forest to support one deer. These facts and many others resulting from deer studies have enabled the public to understand better what was happening in our forests and its effect upon our deer.

Wildlife research played an important role in developing Pennsylvania's deer management program.





PGC Photo by Batchelor

An outstanding example of wildlife research in action has been the development of a superior wild turkey for restocking purposes. These turkey poults just hatched at the State Wild Turkey Farm, Montoursville, will help make Pennsylvania the greatest turkey hunting state in the East.

With this knowledge an informed hunting public was better able to appreciate the necessity for drastic action; for the declaration of antlerless seasons designed to regulate the herd commensurate with its limited food supply; and the need for extensive forest cuttings to encourage more sprout growth and ground cover.

Of considerable importance to the whole research endeavor was the creation, in 1938, of the Pennsylvania Cooperative Wildlife Research Unit at The Pennsylvania State University. This unit, financed jointly by the U. S. Fish and Wildlife Service, the Wildlife Management Institute, the University and the Pennsylvania Game Commission, has made many research studies, and helped to train many wildlife biologists. The Cooperative Research Projects should help solve specific wildlife problems as time goes on.

You have just read the highlights of a quarter of a century of conservation progress. Actually it represents history in the making. It represents time, effort and devotion on the part of many people. This job was not done by the Game Commission's personnel alone. Physically and financially perhaps; but much of the important support—the moral support—came from our Governors, our General Assembly, especially the sympathetic and well informed Committees of Game and Fish in the House and Senate and the general public. It came from our sportsmen's, women's and youth groups and from other organizations interested in conservation. Without the help of these groups and individuals the road would have been very rough indeed. We take this opportunity in humility, respect and appreciation to thank all of them.

25 WELL KNOWN PENNSYLVANIA WILD ANIMALS



A Special Feature of the

PENNSYLVANIA GAME NEWS

Silver Anniversary Issue

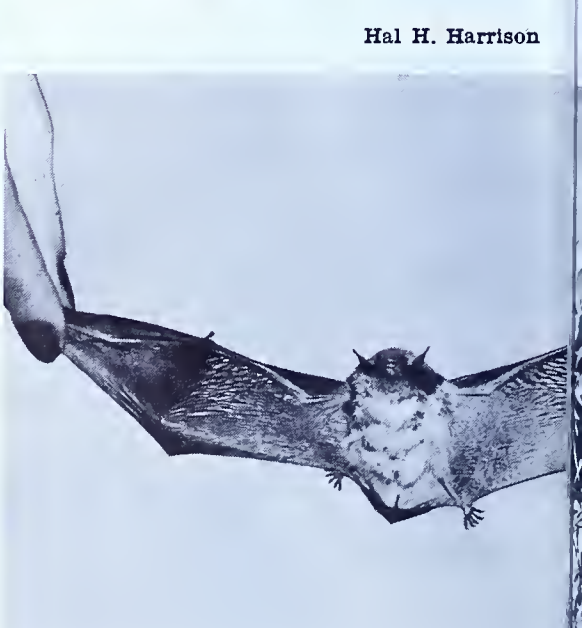
APRIL, 1954



PGC Photo by Cady

OPOSSUM *(Didelphis virginiana)*
Weighs up to 14 pounds. Lives almost anywhere in open woods, swamps, wastelands. Makes nest of leaves in fallen log, hollow tree, or woodchuck burrow. Does not hibernate. Up to 18 young born about 12 days after mating; smaller than honey-bee at birth. Live in mother's abdominal pouch (marsupium) four to six weeks; attached to 13 teats. Remain with mother about three months. Feeds on almost any organic matter —fruits, berries, earthworms, insects, frogs, snakes, birds, small mammals, eggs, corn, nuts. Fur used mostly for trimmings. Flesh relished by some.

Hal H. Harrison



LITTLE BROWN BAT *(Myotis lucifugus)*
Only flying mammal in world. Found throughout the state; flies most at hour of sunrise and sunset. Mates in fall but single young not born until mid-June to mid-July. Newborn bat remains hidden in some dark retreat while parent forages in evening; nurses two to three weeks, then takes wing to capture own food. Adults feed entirely on insects, make up to 30 mile flights from home roost. Spend winters sleeping in buildings, mine shafts, caves; may perform short migrations. Flying bats detect obstacles in path by emitting supersonic notes and hearing these sounds when they bounce back from obstacles. Bats are harmless but droppings have disagreeable odor. May be kept out of buildings by boarding up entrance holes or by sprinkling retreat with several pounds of naphthalene flakes.

PGC Photo by Cady



BLACK BEAR *(Euarotos americanus)*
Adults average 200-300 pounds. Pennsylvania record 633 pounds live-weight; 538 pounds hog-dressed; length, nine feet; killed December 4, 1923 near Milford, Pike County. Found in wooded sections of state but may enter farmlands when natural food is scarce. May range many miles in search of food. Fond of fruits and berries, honey, nuts, ants. Mates in June; 1-4 young born in late January or early February while mother is in winter sleep. Young are blind, weigh no more than 8 ounces, are practically hairless. Adult females bear young only every other year; cubs stay with mother through summer and fall. Winter den in hollow stump, shallow cave, windfall or sometimes open. Not true hibernators. Usually not dangerous except when cornered or disturbed with cubs.

NORTHEASTERN MINK *(Mustela vison)*
Length to 25½ inches; weight of male 1½ to 2½ pounds, females lighter. Usually found near waterways; may roam woods in winter. Makes den under large tree, in muskrat lodge, or in natural cavities along stream banks. Mates mid-February to early March; 4-8 young born 42-44 days later. Young blind, naked; weaned at 5 weeks. Both parents help raise young; family disperses in early fall. Diet includes fish, frogs, aquatic insects, snakes, small mammals, some birds. Strong scent glands. One of most valuable furbearers; many now raised in captivity at fur farms.



Maslowski & Goodpaster from National Audubon Society



Allan D. Cruickshank from National Audubon Society

RACCOON *(Procyon lotor)*
Adults average 15-18 pounds, may weigh 30 or more. Found wherever woods, swamps and streams provide food and den sites; usually dens in hollow tree. Active almost entirely at night. Excellent climber; descends either head or tail first. Spends early winter sleeping but not a true hibernator. Breeds in late January or early February; 3 to 6 young born early April. Eyes open at three weeks; family remains together until late fall, often into winter. Feeds on wide variety of foods; particularly fond of crayfish, fruits and berries, nuts, grains, crickets, grasshoppers, corn. Does not always wash food. Desperate fighter when cornered but young tame easily. Valuable furbearer but classified as game animal in Pennsylvania. Fur is thick and durable, widely used in manufacture of coats and trimmings.

Maslowski & Goodpaster

NEW YORK WEASEL *(Mustela frenata)*
Males up to 24 inches in length; females to 13 inches. Weigh up to 12 ounces. Some turn white in winter, except for black tail tip; called ermine, change occnrs in November, again in March. Prefers fairly open country; found in sparsely wooded second growth thickets, along waterways, sometimes in marshes. Make dens in shallow burrows, underneath stumps, in banks of gullies. 4-8 young born about April; both parents help raise young. Chief food is field mice but diet may also include cottontail rabbits, chipmunks, shrews, small birds, poultry, snakes, frogs, and insects. Do not suck blood; have strong scent glands. Cover several miles in search of food at night but home range not more than 100 acres.



EASTERN SKUNK *(Mephitis mephitis)*

Length to 20 inches; weight to 10 pounds. Found in agricultural areas mostly. Digs own den or may use woodchuck burrow; makes nest of dried grass where one to several animals spend day. Sleeps in severe winter weather but becomes active in mid-February mating season. 4 to 7 young born 51 days after mating; are nursed for 6-7 weeks; leave nest with mother in June. Male may rejoin family in July. Feeds on wide variety of insects, fruits and berries, mice, grains, bird eggs. Scent is world famous but glands are used only in times of great danger. Can give scent when being held by tail but liquid is not blinding.



Rex Gary Schmidt



Maslowski & Goodpaster

WOODCHUCK *(Marmota monax)*

Length to 27 inches, including 6 inch tail. Weight to 12 pounds. Prefers slightly rolling country, interspersed with ridges, in farmland; may be found in woods. Den is extensive soil burrow, having two or more entrances, down to five feet, deep, extending 30 or more feet. Can climb trees and can also swim. Hibernates in winter, emerging in late February or early March. Mates in mid-March; after 28 day gestation period 2-6 young are born. Young are blind, naked, about 4 inches long, and weight about an ounce. Crawl at 3 weeks, leave den at 1 month. Principal foods are grasses, clover, alfalfa, plantain, various perennials; also fond of beans, peas, other vegetables, corn, apples. Whistles when alarmed. Burrows protect rabbits; flesh edible. Ground-hog day, February 2, not based on fact.

PGC Photo by Cady

NORTHEASTERN OTTER *(Lutra canadensis)*

Length to 3 feet, tail one foot. Weight between 12 and 15 pounds. Feet webbed. Expert swimmer and diver; can travel quarter-mile beneath surface before coming up for air. Loves to play in water or slide on ice or clay slopes. Travels readily overland; home range may cover 50 miles. 2-3 young usually born from mid-April to early May, gestation period about 10 months. Den usually burrow beneath tree roots along lake or stream. Family stays together for one year; young have to be taught how to swim. Food mainly fish, also crayfish, frogs, mussels, insects. Pelt is thick, lustrous; most durable native American fur. Becoming rare in Pennsylvania.





Maslowski & Goodpaster

RED FOX *(Vulpes fulva)*
Length to 41 inches, including 16 inch tail. Male larger than female. Average adult weight 10 to 11 pounds; rare individual to 14 pounds. Prefers rolling farmland, mixed with wooded areas, marshes and streams. Mates January-February, 4-10 young born 51 days later. Pups stay in den 3 - 5 weeks, leave it permanently at about 3 months. Family group disperses in August. Den often in wooded slope, may in open field; sometimes a remodelled woodchuck burrow. Winter food mainly mice, rabbits, some birds, apples, dried berries; spring and summer food woodchucks, poultry, rabbits, birds, eggs, berries, fruit, insects. Population may remain high despite intensive hunting and trapping. Fur widely used for trimming and scarfs; 40% as durable as otter.

PGC Photo by Cady



GRAY FOX *(Urocyon cincereorgenteus)*
Length to 40 inches, including 12 inch tail. Weight 7-11 pounds, to 14 pounds rarely. Found in wooded areas, swamps, but does not like farmland as well as red fox. Good climber. Den in rocks, hollow tree or log. Mates from January to February; 2-7 young born 63 days later. Family breaks up in August-September. Feeds much on cottontail rabbits; also eats field mice, shrews, nuts, fruits, birds, insects, some carrion. Fur used for collars and trimmings; less valuable than red fox.

PGC Photo by Batcheler



BOBCAT *(Lynx rufus)*
Length 30-35 inches, tail 6 inches. Weight 15-40 pounds. Found in wooded or brushy areas, seldom near farmland. Dens usually in rock recesses. Mate in late February 1-4 young born 50 days later. Young well furred at birth, open eyes at 9 days, weaned at about 2 months. Remain with mother through summer. Feed on snowshoe hares, squirrels, mice, muskrats, grouse, carrion. Large bobcat capable of killing full-grown deer, but bobcat population is so low that over-all effect on deer herd is negligible.



Allan D. Cruickshank from National Audubon Society

CHIPMUNK *(Tamias striatus)*
Length to 9½ inches, tail 3¼ inches. Found in open woods; frequents stone walls, half-rotted logs, thick underbrush. Excellent climber. Burrows are lengthy, complicated, cover 30 feet or more. Sleep through winter but may emerge in warm spells. Mate in mid-March—early April; 3 - 5 young born 31 days later; two litters possible. Young stay with mother until 3½ months old. Principal foods are small seeds, berries, fruits and nuts; also will eat small birds, mice, snakes, snails, slugs, insects. Home range 2 - 3 acres. Tame easily.

GRAY SQUIRREL *(Sciurus carolinensis)*
Length 18 - 20 inches, including 9 inch tail. Weight ¾ to 1½ pounds. Black squirrel is color phase; albinos also occur. Found everywhere in woods, city parks, farm woodlots. Den in natural tree cavities but may also build bulky outdoor nest of leaves, twigs. Mate in mid-winter; 1 - 4 young born about 44 days later; may have second litter in fall. Young can leave nest at 6 weeks. Feed mostly on acorns, chestnuts, hickory nuts; also eats buds, various fruits and berries, occasional insect. Stored food located later by scent. Mass migrations sometimes occur, probably because of overcrowding rather than lack of food.

Allan D. Cruickshank from National Audubon Society



E. P. Haddon, Fish & Wildlife Service



RED SQUIRREL *(Tamiasciurus hudsonicus)*
Length to 12½ inches, including 4⅜ inch tail. Found everywhere; spends great deal of time on ground; favors evergreen forests. Active almost year round. Mates February—March; 3 - 6 young born in about 40 days; eyes open 27th day; young weaned when less than 5 weeks old; two litters a year. Principal foods include nuts, berries, maple and elm buds, conifer seeds, many species of fungi, occasional nestling or clutch of eggs. Sometimes causes damage to urban shrubs and trees by stripping bark of cedar trees.

FOX SQUIRREL *(Sciurus niger)*
Length 20-25 inches, including 12 inch tail. Weight to 3 pounds. Found in semi-open woods of oak type; often occupies farm woodlots. Builds shelter of leaves for summer home; spends winter in tree cavity or builds more elaborate structure of leaves, bark, twigs. Mate in January 1-4 young born 44 days later; develop slowly and leaves nest at 6 weeks. May have two litters per year. Principal food consists of nuts and other tree fruits. Does not hibernate.



Allan D. Cruickshank from
National Audubon Society



OPL Photo by Rex Gary Schmidt

BEAVER *(Castor canadensis)*
Weigh up to 60 pounds; length to 45 inches, including tail 16 inches long, 5 inches wide. Found on suitable waterways throughout state, often surprisingly close to cities. Mates late January-February; 1-8 young born about 3 months later; young remarkably well developed at birth; leave lodge at one month, stop nursing at 6 weeks. Feeds entirely on plants, largely bark of aspen; also found of maple, willow, alder, apple, birch bark, some aquatic plants. Builds excellent dams and houses but may live in bank burrow. Tail not used for building purposes. Very valuable furbearer; pelts worth $75 or more some years.

PGC Photo by Cady

FLYING SQUIRREL *(Glaucomys volans)*
Length to 9½ inches, including 4½-inch tail. Found in wooded areas throughout state but not often seen because it is entirely nocturnal. Cannot actually fly but glides from tree to tree; can cover over 150 feet in one glide, turn at right angles in "flight". Mates in late February—early March; 2-6 young born 40 days later. Second litter produced in July-August. Feeds on usual variety berries, nuts, other tree fruits, insects; also will eat flesh—mice, small birds.



PENNSYLVANIA MEADOW MOUSE
(Microtus pennsylvanicus)

Length to 7 inches; with 1⅘ inch tail. Very widespread in state; found in low meadows, swampy pastures, dry fields, forest openings. Cyclic; in 3-4 years build up to high; may be 200 mice per acre in favorable habitat. Bred almost year round; up to 17 litters of 3-10 young; 3 week gestation period; young weaned 10-12 days. Feeds on almost any type vegetation; girdles trees; may eat more forage in U. S. than domestic cattle; consumes more than own weight in green food every day. Active year round.



Karl H. Maslowski



Maslowski & Goodpaster

MUSKRAT *(Ondatra zibethica)*

Length to 25 inches, including 10 inch tail. Weight to 3 pounds. Found in waterways and marshes throughout state. Builds lodge of marsh vegetation or lives in bank burrows; lodges harbor up to 10 or more animals. Mates in March; 3-8 young born 29-30 days later; may have several litters per year. Feed on acquatic vegetation, roots and stalks of cattails, three-square grass, sagittarias; fresh water clams; some fish and crustaceans. Most valuable of all fur-bearers; pelts were known as Hudson seal, Russian otter, red seal, river mink; 45% as durable as otter.

Maslowski & Goodpaster

PORCUPINE *(Erithizon dorsatum)*

Length to 36 inches; tail 6 inches. Average adults weigh 10-20 pounds. Found in deeply wooded sections of northern counties. Mates in November; 1-4 young born 16 weeks later; eyes open at birth, 11 inches long, weighs about a pound (twice size of newborn bear), can climb second day. Feeds almost entirely on vegetation—evergreen foliage, tree bark, water plants. Cannot throw quills; does not hibernate. Does some damage by girdling trees.





PGC Photo by Cady

COTTONTAIL RABBIT *(Sylvilagus floridanus)*

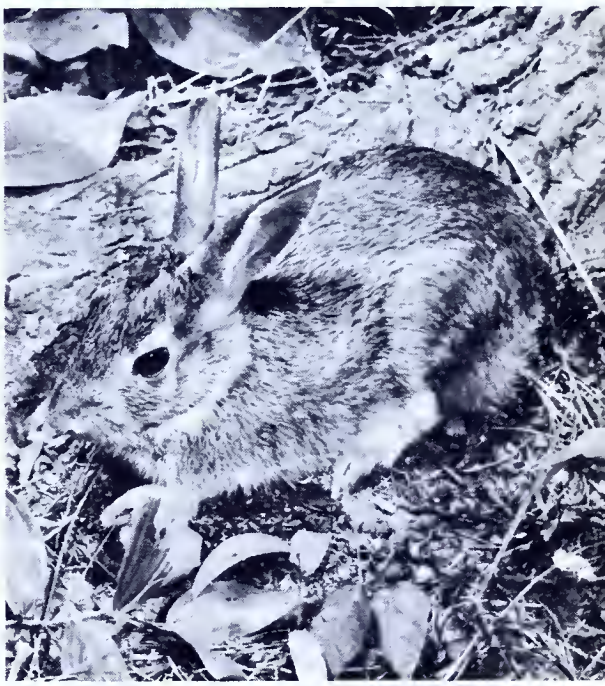
Length 15 - 18 inches, tail 2 inches. Weight 2½ - 3 pounds. Occupies diverse habitat, from swamps to upland thickets; not usually found in deep forest. Spends day in "form"—nest-like depression in grass, brush, etc. May utilize woodchuck burrow but seldom digs own. Home territory no more than 32 acres. Mates March-June; 2 - 9 (average 4 - 5) young born 30 days later; 3 - 5 litters per year; young leave nest before 3 weeks. Feed on variety of plants; chiefly grasses and low broad-leafed weeds in summer, buds and tender twigs of many small trees and brushes in winter; food of sumach bark. Most popular game in Pennsylvania.

William M. Rittase

VARYING HARE (SNOWSHOE RABBIT) *(Lepus americanus)*

Length to 18 inches; tail 2 inches; hind feet 5½ inches. Weight 3 - 5 pounds. Forest species; prefers brushy semi-open tracts surrounded by evergreen forest, dense cedar swamps, laurel thickets. Mates in June; 1 - 6 young born 36 days later; probably more than 1 litter per year. Cyclic species; population high about every 10 years. Feeds on aspen, conifers, dandelions. Home territory about 10 acres; excellent game species.

Jack Dermid from National Audubon Society





ELK *(Cervus canadensis)*

Length: bull to 9½ feet, cow to 7½ feet. Height at shoulder to 5 feet 8 inches. Average male weight 700 - 1000 pounds; female 500 - 600 pounds. Bull has great rack, to 5 feet long; shed every year. Last native Pennsylvania elk killed 1869; present herd started by stocking western elk Clearfield and Clinton Counties 1913. Present day herd found Cameron County, few in Elk and Forest. Breeds September-November; 1 or 2 calves born 249 - 262 days later; weigh about 30 pounds at birth; weaned in October. Feeds by grazing or browsing twigs, leaves, grasses, etc. Completely protected in Pennsylvania.



E. P. Haddon, Fish and Wildlife Service

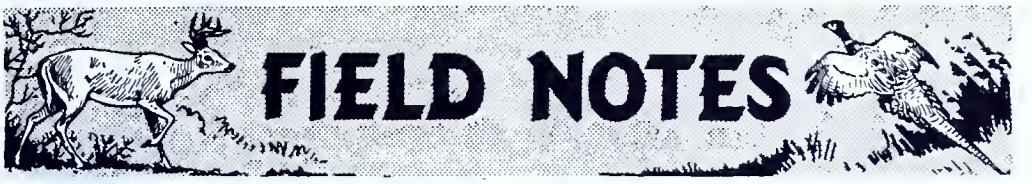
WHITE-TAILED DEER *(Odocoileus) virginianus)*

Length to 6½ feet; height at shoulder to 4 feet; weight average adult bucks 100 - 200 pounds, does 90 - 150 pounds. Found throughout state; individual range usually not more than 1 square mile. Breeds October-December, peak in November; 1 - 3 fawns born 205 - 212 days later; weigh 4 - 5 pounds at birth; nursed every 4 hours; weaned at 4 months. Food largely browse—twigs, buds of maples, birch, viburnums, blueberries, some conifers. Also eats nuts, fruits, some grasses, water plants. Speed to 30 m.p.h.; can jump 8 feet high, 30 feet horizontal. Most popular Pennsylvania big game animal.

WANT TO HELP WILDLIFE?

25 *Things You Can Do*

1. Plant shrubs and other plants to provide food and cover.
2. Build and erect squirrel nesting boxes.
3. Build brush piles to provide cover for rabbits and other small animals.
4. Plant hedgerows and fencerows that provide food and cover and serve as travel lanes.
5. Make woodland openings to encourage plant growth and insect life for wildlife.
6. Cut browse for deer in winter.
7. Plan and set-up a wildlife conservation exhibit in your school, local club, or other community center.
8. Make and distribute posters urging people to save our wildlife.
9. Make plaster casts of animal tracks and exhibit them.
10. Make a spike-board feeder, place ears of corn on spikes, and place in woods for squirrels.
11. Make and distribute forest fire prevention posters.
12. Organize and train a forest or field fire fighting crew.
13. Contact your local Game Protector. Ask him if you can help in some of his regular duties such as carrying out winter feed, brushing out refuge lines, etc.
14. Prune apple or other fruit trees on abandoned farms so as to encourage more food for wildlife.
15. Build a nature trail and conduct guided tours to teach others the value of wildlife.
16. Practice and teach good gun handling and field safety. Teach others "sure shot—no cripples."
17. Gather up acorns or other nuts from city parks, other urban areas and plant them in the woods or on farm woodlots.
18. Help in the Game Commission's cottontail rabbit live trapping and transfer program; see your local Game Protector for details.
19. Help build a dam or other device to regulate and manage a marsh area.
20. Build artificial den sites for rabbits, other furbearers.
21. Control predators by trapping for foxes, skunks, raccoons, opossums.
22. Learn how to call great horned owls and hunt them. Best time is from June to October.
23. Give a talk on wildlife conservation before your class in school or any other civic group.
24. Encourage and help build farm ponds as homes for such wild animals as muskrats, mink, etc.
25. Encourage farmer friends to use soil conservation practices, especially plowing on the contour.



FIELD NOTES
THROUGH THE YEARS
25 Outstanding Reports From Spring Issues Of the Past

1929

Game Protector Harry Meiss tells us an interesting story of deer being killed by trains on the Lehigh Valley railroad between Mountain Top and White Haven. "During the past two weeks four bucks and two does were killed by fast trains. I was astounded by the frequent calls from the railroaders. Investigation showed that a carload of salt was leaking and the salt was spread along the right-of-way attracting the deer. I know of no way to cope with this situation except to pray for rain to melt the salt. If the salt had been scattered only in a few spots I thought we might pour kerosene about, but this would be impossible along a fifteen-mile stretch."

1930

Assistant Game Protector Warren Simrell writes the following:

"There was an unusual occurrence at New Milford, May 1st. Early in the morning an adult beaver was discovered in the Creamery Pond (150 feet long and 25 feet wide) right in the village. It created more excitement than a circus; almost the entire population of 600 turned out as well as people from the surrounding country districts. Probably 90 per cent had never seen a beaver.

I was there twice during the day putting up signs to keep small boys from throwing sticks, etc. The animal would swim most of the time, occasionally going on the bank to comb. People kept coming and going until dark. The beaver left during the night. The spot is not far from our Refuge No. 35. No doubt the animal came from one of the two colonies on State land, crossed the hill, following the creek to the creamery at New Milford.

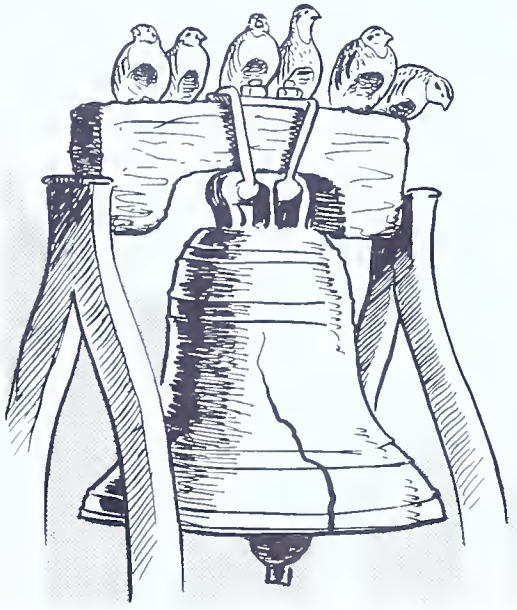


1931

To those in the field who use the .22 calibre rifle to any extent, I would suggest they first consult the manufacturers of their rifles before attempting to use the NEW HIGH POWER '22' CALIBRE SHELLS, recently placed on the market. I know of two sportsmen in my territory who have bursted the barrels of their guns while shooting this particular shell. The rifle in question was a high priced arm and the makers have a very good reputation.—Deputy Game Protector Roger L. Franke, Millersburg.

1932

One of the interesting sidelights in connection with the present survey of Hungarian Partridges has been a report received from Joseph Colosimo, Lawndale, Philadelphia, Pa., to the effect that he observed a covy of Hungarian Partridges on March 7, in Cheltenham Township, Montgomery County. This particular section of Montgomery County is within sight of the City Hall of Philadelphia.—C. A. Hiller, Chief, Bureau of Propagation.



1933

Deputy Game Protector Barton L. Sharp, of Lititz, reported recently to Game Protector J. M. Haverstick that he saw several odd-looking quail in the vicinity of Brickerville along the Lancaster-Lebanon County line. He located a number of the birds, all in pairs. They were California Valley Quail. Haverstick believes the birds were liberated by a family by the name of Coleman, as this family releases quite a few game birds on their estate near Brickerville.

1934

Refuge Keeper Herbert Diehl, State Game Lands No. 26, reported that the C. W. A. crew on Project No. S-0226, in Bedford County, under the direction of Foreman J. C. Dibert, found two newly born gray squirrels on State Game Lands on March 5th. Mr. Diehl said that one of the other men stated that several years ago in early February he had cut a tree that had six newly born squirrels in it.

1935

Game Protector Clarence Moss, Wyoming County, reports the following:

Deputy Smith, of Alderson, while on a stand watching for deer, spotted a nice buck coming leisurely toward him. The animal had but one antler, a nice five-pointer. Waiting to get a better shot, Smith let the deer come closer. Soon it passed behind a small clump of hemlock trees. The hunter waited for a good five minutes and then out stepped a doe. Smith had been on that stand for over an hour but he had not seen any does about. After the doe had passed out of sight, Smith got



suspicious, went down to the clump of trees, and, sure enough there lay the five-point antler.

1936

Game Protector Bruce Yeager of Northumberland County outlined in a recent talk some interesting notes on the game feeding done in that section: 14,770 pounds of ear corn and 9,900 pounds of scratch grain were purchased at a cost of $288. The cost of distributing it amounted to $500. The game fed, carefully checked as to numbers at the various feeders, included 2,370 ringnecks, 1,123 Hungarian Partridges and 340 bobwhite quail. Hundreds of squirrels and rabbits also were fed. The cost of the game birds thus saved, should the Game Commission have had to replace them, is as follows: 2,370 ringnecks, $7,100; 1,123 Hungarian Partridges, $5,615; and 340 bobwhites, $680—a total of $13,450.

1937

Game Protector L. H. Wood of Tioga County, who has busied himself checking on the respirations of hibernating bears, made the following observation on a one-year-old bruin: The yearling took an average of three and one-half breaths per minute. The fact that this bear was so young may have had an influence on the breathing rate as compared to that of an adult. Wood promises to check on their heart action if he can locate another dozing bear.

1938

The following incident was related to me by R. L. Anderson, of Petersburg, Pa. Have checked following with other hunters and find story to be authentic.

Mr. Anderson, while hunting for deer on Saturday, December 4, on Warrior's Ridge, in Oneida Township, was rather surprised to hear coming towards him what he thought might be a Drum Corps out on parade. Upon waiting he learned that it was a deer drive, composed of three men with snare drums and one man with a bass drum. How they were able to get through this section with drums and still play them is quite a mystery to Mr. Anderson, as it is very brushy. When in very thick scrub oak the beating of the drums was rather ragged,



but when the drivers got into more open territory they would certainly go to town. Personally, I know the above area to be covered with nothing but brush, principally scrub oak. —Ross Metz, Refuge Keeper, Huntingdon County.

1939

While training my bird dog on Farm Game Refuge Project 1, he came to a point. Upon investigation I found that he had pointed a black snake about five and one-half feet long, which was swallowing a quail. After killing the snake I cut it open to find a rabbit about two-thirds grown. Can any of the readers tell me what my dog scented—snake, quail or rabbit?—Newton McDowell, Deputy Game Protector, Chester County.

1940

Two Indians in full regalia hunted deer with the bow and arrow last season on the State Archery Preserve in Sullivan County, according to E. W. Carpenter, Game Protector in charge of the Game Refuge in that district. One of the Indians "Chief Running Water" gave his age as 75 and his residence as Harrisburg.



1941

On Saturday, February 8th, I saw seven turkeys at the Game Feeder in Refuge 97A. This is the largest flock that I have ever seen in the Refuge at one time. They were feeding on the oat sheaves which I had covered the feeder with. Turkeys also feed on corn at feeder but that had all been eaten and they were in and on top of the feeder eating oats. These are all genuine wild birds as no birds were stocked in that section for some time. Also have a couple turkeys coming into feeders at headquarters.—Albert R. Bachman, Game Protector, Bedford County.

1942

In December one day about noon, while on routine patrol in the vicinity of Laurel Summit, Westmoreland County, my attention was attracted by shooting. I started in the direction of the shots and soon met a hunter leaving the woods. Upon my inquiry about the shooting, he stated that 'some fool was shooting at a mark'.

I hurried in the direction of voices I heard. As I climbed a hill toward a group I could now see, I stopped in amazement and began to wonder if my eyes were deceiving me. There was a group of five hunters with a doe standing docilely among them; two of the group had their arms around its neck. A short distance away was a small fawn, not quite as tame as its mother, and another hunter trying to get closer to it. This hunter had a rock in his hand and was taking the stance of a baseball pitcher about to put a "Dizzy Dean" third strike across the plate. He appeared to be so intent in his endeavor that I really think he meant



to kill the fawn. I called to him not to injure the animal unless he was prepared to pay a hundred dollar fine. He immediately dropped the rock and started to walk away. I went up to him and questioned him about his actions and checked his license certificate.

We then went back to join the other men. They were seated on a fallen log, the deer nosing at their backs and at their pockets. I asked them to tell me the secret of being able to find deer in the woods that would eat out of their hands. They said the deer had just wandered up to them; they couldn't explain their presence nor could they understand it. They were as puzzled as I was. They got quite a kick out of it, and had taken two rolls of pictures. One fellow explained that he had fed them his entire lunch.

The question of who was guilty of the "shooting at random" was soon settled. The fellow who tried to "throw a strike" at the fawn was the guilty person. He was hunting alone and not a member of the party of five. He had been trying to cut an upper limb from a dead tree with a 12 guage pumpkin ball, never realizing the danger that existed with the woods so full of hunters. Needless to say he paid for his carelessness.

Later in the day, I learned the source of the tame deer. They had escaped from a roadside menagerie nearby early in the fall.—Robert D. Parlaman, Game Protector, West Newton, District G-11.

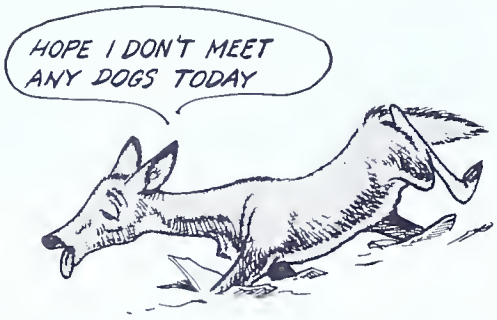
1943

When you see an old turkey hen on the Fourth of July with eleven young turks; see them in August weighing about seven pounds; see them again in September all intact; watch them sneaking away under their mother's guidance when they have noticed a human being nearby; see them several times in October slipping away from the feeder and disappearing in the brush—then as the thunderous sounds of many shotguns boom nearby as the hunting season opens, see them carefully maneuvering away from the approaching hunter, or perhaps the amateur turkey caller who slips on the proper notes, and then taking shelter in the nearby refuge. . . .

See the same dozen on Thanksgiving Day leaving the feeder, and almost having heart failure for you know there are only a few remaining hunting days left; see them several times in deer season; talk to several groups of hunters who have tracked them in the snow; again see their tracks in the refuge, but still fearing some deer hunter will try a sneak shot. . . .

The season silences, snow comes, freezing weather that hardens the soil. Then you note their scratching here and there for their natural foods, still calling at your feeder, still intact, seeing their glossy coats, knowing they are in the pink of condition. . . .

Ain't it a grand and glorious feeling?—Game Protector John Dittmar, District 9, Division D.



1944

The eight-inch snow that blanketed this section for more than two weeks caused a lot of fatalities among our deer herds. It was not a case of starvation but one of equal importance to all concerned. With the heavy crust on the snow, dogs, running alone and in packs, would exhaust the deer in short order and the kill would follow. I found four deer killed in this manner, and several dogs died for their misdeeds.—Game Protector Paul L. Failor, Group B-2.

1945

While cutting browse in Fisk Hollow on State Game Lands No. 59 on February 13th, we found eleven dead deer along about a half mile of the stream. All were fawns except one and it died from getting its foot caught between two trees while reaching for food.—Game Protector Cecil D. Hancock, Port Allegany.

1946

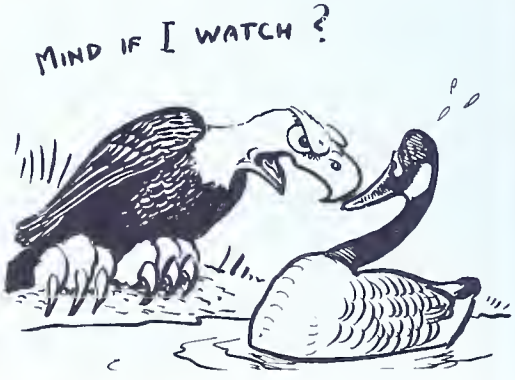
Two Hereford steers roamed the mountain on State Game Lands No. 42 from Monday, February 18th until February 23rd. They escaped from a farmer when he was trying to load them on a truck to be taken to market. The farmers participating in the hunt and shooting of the steers agreed that wild steers are harder to hunt than deer.—Game Protector Louis D. Mostoller, Hohnstown.

1947

Two trappers related how, when they went to a beaver dam to set some traps, they ran across the tracks of two large beavers coming from the dam. They followed the tracks for more than a half mile, across country, through a cultivated field, skirting a woods and into another smaller stream. They believe, and so do I, that those beavers were scared out of that dam by hearing too many preparations being made by other trappers. The beavers took the hint and cleared out while the going was good.—Game Protector Clair W. Dinger, Albion.

1948

Between 700 and 800 Canada Geese had been wintering over at the Pymatuning Lake Refuge until early January. Then, quite suddenly, all but eight left. The reason for their sudden departure seemed to be a Bald Eagle which had also decided to stay North. Although, to our knowledge, the eagle had not physically



harmed any of the geese, it did fly to feeding areas when the geese were present and sit on the ground close by to watch them. It did the same thing when the geese were resting on the edge of the ice which covered the lake. Game Protector Sickles and others believe that the eagle frightened the geese and that they went South.—Special Services Assistant James Brown, Titusville.

1949

Checking beaver dams for traps one day while on patrol, I saw a grouse attempting to fly but unable to get off the ground. Upon closer observation, I noticed its broken wing tip. Picking up the bird, I cut off the broken part of the wing and put the fellow back on the ground which was covered with snow. The bird fluttered around but did not make any headway in the snow. Puzzled as to just what to do with it, I finally put it in the back of my hunting coat and took it home with me. I put it down on the kitchen floor and it fluttered around, soon to find a hiding place in the bottom of an open cupboard. My wife said it stayed there all afternoon. We had made arrangements to go out for dinner that evening and I figured the bird would stay put. Upon returning about an hour later, we found our grouse in the parlor. It had been feasting upon an African Violet that Mrs. Bill had just received a few days previously for a birthday present. The price of African violets, I do not know, but you can just bet that I'm going to find out very shortly. I think he will have been a pretty expensive guest, but costly or not, it is one way of finding out what grouse like to dine on in the winter. —Game Protector William Overturf, Marienville.



1950

I had an unusual experience on January 12. While assisting Game Protector Les Haney with filling feeding shelters in Refuge 54-B, Haney took a stick and began to hammer on the shelter. In less time than it takes to tell it, 18 deer came bounding in from all directions. They came within 10 feet of us. The reason I think this was so unusual was due to the fact that an antlerless deer season had just closed when it wouldn't have been safe for one of them to move. Not one of these deer had visible antlers.—Game Protector Ed Richards, Portland Mills.

1951

TIDIOUTE—This winter there were persistent rumors that the woods in the vicinity of Tidioute and Grand Valley were alive with wild animals such as mountain lions or similar creatures. These rumors have been floating around here for the past three years or so and a year ago last September, Limestone Township was alive with these monsters. I was called out in the wee small



hours of a cold January night this year to listen to a tirade of noises issued by one of these mythical creatures called panthers. The animals were supposed to be six feet long and weigh 175 pounds. Well, I have heard quite a few noises of the wild and this time I decided it was time to prove that some people let their eyes and ears deceive them. So the next day I set three fox traps and in three days had killed three large gray foxes. There have been no reports of weird noises coming from that area since I killed the foxes.—District Game Protector George Burdick, Tidioute.

1952

WASHINGTON—On January 2, 1952, I received a call from Mr. Moore of Washington, R. D. No. 6. The complaint he had was that three deer were coming into his horse stable, chasing the horses out and eating their feed. The one horse had a hole punched in the side of its nose; apparently the buck had hit him with his horns. The horses would not stay in the stable unless Mr. Moore would stay with them. As soon as he would leave, the horses would run out of the stable and would not go back to finish their grain. That is when the deer would show up and they finished the horses' feed. Mr. Moore changed the feeding time for the horses, and now everything seems to be all right.—District Game Protector George T. Church, Washington.

1953

CANTON, Bradford County—On the evening of the first day of deer season I was talking with a hunting party from Elmira, New York. One of the men had made a list of the game he had observed that day on State Game Lands No. 12. Here is what he saw—one buck (which he missed with two shots), twenty-one antlerless deer, a black bear, eight grouse, nine wild turkeys, seven gray squirrels, two black squirrels, one raccoon (which he shot) and one red fox.—District Game Protector Duane E. Lettie, Canton.

1954

HEART'S CONTENT, Warren County—On Saturday afternoon, January 23rd, I entered the fire tower area at Heart's Content. I was planning to refill a game feeder located down an old woods road behind the tower. It was a bitter cold day and as I was parking my car, I noticed some boys near the fire tower. Thinking they might be members of a local Scout Troop, I approached to see if I might enlist their aid in carrying the feed to the feeding station. Much to my surprise, these six boys were scouts all right—but from Boy Scout Troop 11 of Youngstown, Ohio. They had spent Friday night camped in the area and were planning to stay over Saturday night, returning home Sunday afternoon. When they found out what I was doing in the area, they were ready and willing to lend a hand in carrying the feed out for our wildlife.—District Game Protector Dave Titus, Warren.



25 Questions Often Asked About The Pennsylvania Game Laws

1. **Q. Does the 3-shell limit apply to shotguns used on big game?**
   A. No.

2. **Q. Is a permit required to ship legally taken raw furs outside of this Commonwealth?**
   A. No, not since September 1, 1953.

3. **Q. What kind of cartridge may not be used on big game?**
   A. All .22 and .25 calibre rimfire cartridges are unlawful for big game hunting.

4. **Q. What type bullet may be used for big game?**
   A. Any all-lead, lead alloy, soft-nosed or expanding bullet or ball. Only one shell may be fired at a single discharge. Buckshot is illegal.



5. **Q. May a deer hunter continue to carry his gun after he has killed a legal deer?**
   A. There is nothing in the present law to definitely forbid it, although it does specifically prohibit a hunter from attempting to kill a second deer. Most hunters leave their guns at headquarters after killing a deer, thus avoiding the temptation to shoot another one.

6. **Q. Must I plug my pump shotgun to limit it to three shells for deer and bear hunting?**
   A. No.

7. **Q. How long after the close of the hunting season can game legally killed in this Commonwealth be retained by residents?**
   A. Until July 2 of the following year. No permit is required.

8. **Q. May I hunt big game with a double-barrel shotgun when both barrels are loaded with ball shells?**
   A. Yes. It is legal to hunt deer or bear with a double-barrel shotgun when both barrels are loaded with what is commonly known as "pumpkin" ball shells. It would be a technical violation of the law to discharge both barrels at a deer or bear at the same time. The loading of both barrels of a shotgun however is not prohibited.

9. **Q. In connection with the law concerning loaded guns in vehicles, would it be considered illegal to have shells in the magazine of a bolt-action rifle when bolt of rifle is removed from it?**

A. Yes. The present Game Law makes it strictly illegal to possess, in a vehicle on or along a public highway, a rifle or shotgun from the magazine of which all shells and cartridges have not been removed. Even though you remove the bolt from a rifle, that would not permit its possession in a motor vehicle with cartridges in the magazine. All shells must be removed from the magazine of the gun, as well as from the chamber.

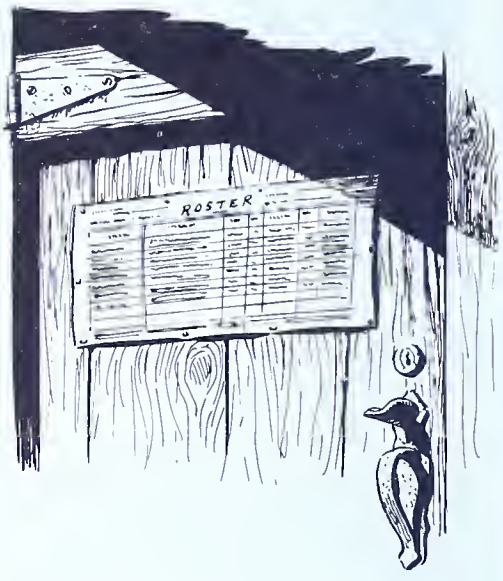
10. **Q. Must I plug my pump gun to limit it to 3 shots for wild duck hunting?**

A. Yes. In hunting migratory game birds, such as woodcock, wild ducks, geese, doves, etc., Federal regulations require repeating shotguns to be limited to a capacity of three shells, and guns for that purpose should therefore be plugged so that plug cannot be removed without disassembling the gun.

11. **Q. Is it permissible to use a rifle to take wild ducks and geese?**

A. No. The taking of these birds is regulated by Federal statute, which restricts waterfowl, woodcock and dove hunting to the use of a shotgun only, not larger than a 10-gauge, or a bow and arrow.





12. **Q. What was the purpose of enacting the law prohibiting the possession of loaded firearms in motor vehicles?**

A. To protect human life. A loaded shotgun or rifle in or on a motor vehicle is a highly dangerous weapon, even while carried on "safe." Firearms are mechanical weapons, of course, and the slightest jar may produce a discharge and injure passengers in the car.

13. **Q. What is the law governing big game rosters?**

A. Five or more persons hunting together, or in any manner cooperating with others while hunting for big game, shall at all times maintain upon the person of the Captain or leader in charge of the group a roster on a form supplied or approved by the Commission and containing the names of all cooperating persons and such other information as may be required. An additional duplicate copy of the roster shall be posted at the Headquarters or camp of such party in such manner as to be

plainly visible for inspection from the outside.

"Headquarters" includes any hunting camp, lodge, hotel, boarding house, private residence, tent, automobile, truck, trailer, or other place of abode, either temporary or permanent. Each roster shall at all times be open to inspection by any officer whose duty it is to enforce the Game Laws of this Commonwealth, and shall be produced in the field upon demand of any such officer. The copy of the roster posted at a permanent camp, lodge, boarding house, hotel or residence shall remain posted at the headquarters for thirty days following the close of the open season.

14. **Q. Does the three-shell limit apply to rifles the same as it does to a shotgun?**

A. No. The shell limitation does not apply to rifles. It is applicable only to magazine or "pump" shotguns. However, "pump" shotguns are not restricted to the use of three shells when being used for big game hunting.

15. **Q. Must a "pump" gun be plugged while hunting small game, such as rabbits, pheasants, and turkeys?**

A. No. A shotgun need not be plugged to hunt upland small game. A plug is required, however, for hunting any migratory game birds, which include ducks, geese, woodcock, etc. As a matter of safety, the use of the plug is recommended, whether hunting upland game or migratory fowl.

16. **Q. May a .22 caliber rifle be used for hunting small game?**

A. It may be used for hunting all species of small game except



doves, woodcock, and waterfowl, provided it is not an automatic.

17. **Q. Is the number of persons hunting in a party for small game restricted?**

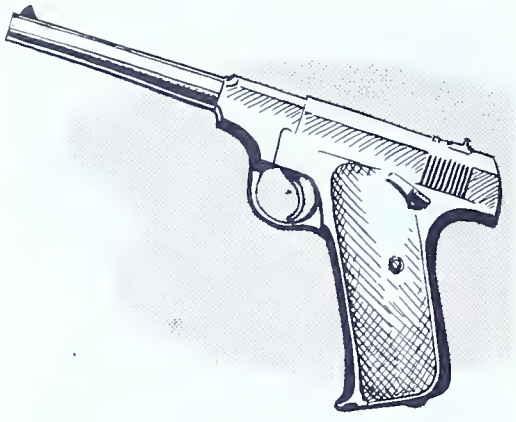
A. Yes. It is unlawful for more than five persons to hunt in unison, or to cooperate in any manner with each other, to hunt for wild birds or wild animals of any kind other than big game.

18. **Q. Is it lawful to engage in target practice, on your own land or elsewhere, without a hunting license?**

A. Yes. A hunter's license is not required for shooting at targets other than wild birds or wild animals, but hunters must not discharge firearms within 150 yards of occupied buildings without first obtaining consent of the occupants.

19. **Q. Is it lawful to carry a gun into the woods of Pennsylvania in pursuit of crows or foxes without carrying a hunting license?**

A. No. It is not lawful to carry a gun in the fields or forests of this state for the purpose of hunting such unprotected species as the crow or the fox unless the hunter is in possession of a proper hunter's license and displays the tag on his back. The Game Law requires this license to hunt or kill any wild birds or wild animals, including the unprotected species.



20. **Q. How old must a person be to carry a revolver while hunting and trapping, and what is the minimum age at which to get a permit to carry a pistol at all times?**

A. Eighteen years.

21. **Q. I have a .22 Cal. automatic pistol and have a permit. Am I allowed to carry the pistol in the woods?**

A. It is not lawful under the present Game Law to hunt or take any wild birds or animals by using an automatic pistol or rifle, so it is therefore not advisable to carry an automatic pistol or rifle in the woods for the purpose of shooting at birds or animals. The possession of such a pistol or rifle while hunting might be considered evidence of its illegal use, so to be on the safe side, don't carry one while hunting birds or animals. There is no objection to the use of an automatic pistol for shooting snakes.

22. **Q. What are the current bounty rates?**

A. Effective June 1, 1954, bounty rates for each species are authorized as follows: Grey fox—$4.00; Red fox—$4.00; Great-Horned Owl—$5.00 for each adult or fledgling except those killed during November and December, when no bounty is paid.

23. **Q. May an automatic or autoloading shotgun be used to hunt in Pennsylvania?**

A. Yes, an arm of this type may be used to hunt small game, predators and unprotected birds. The three-shell limit applies. It is illegal to use it for hunting big game.

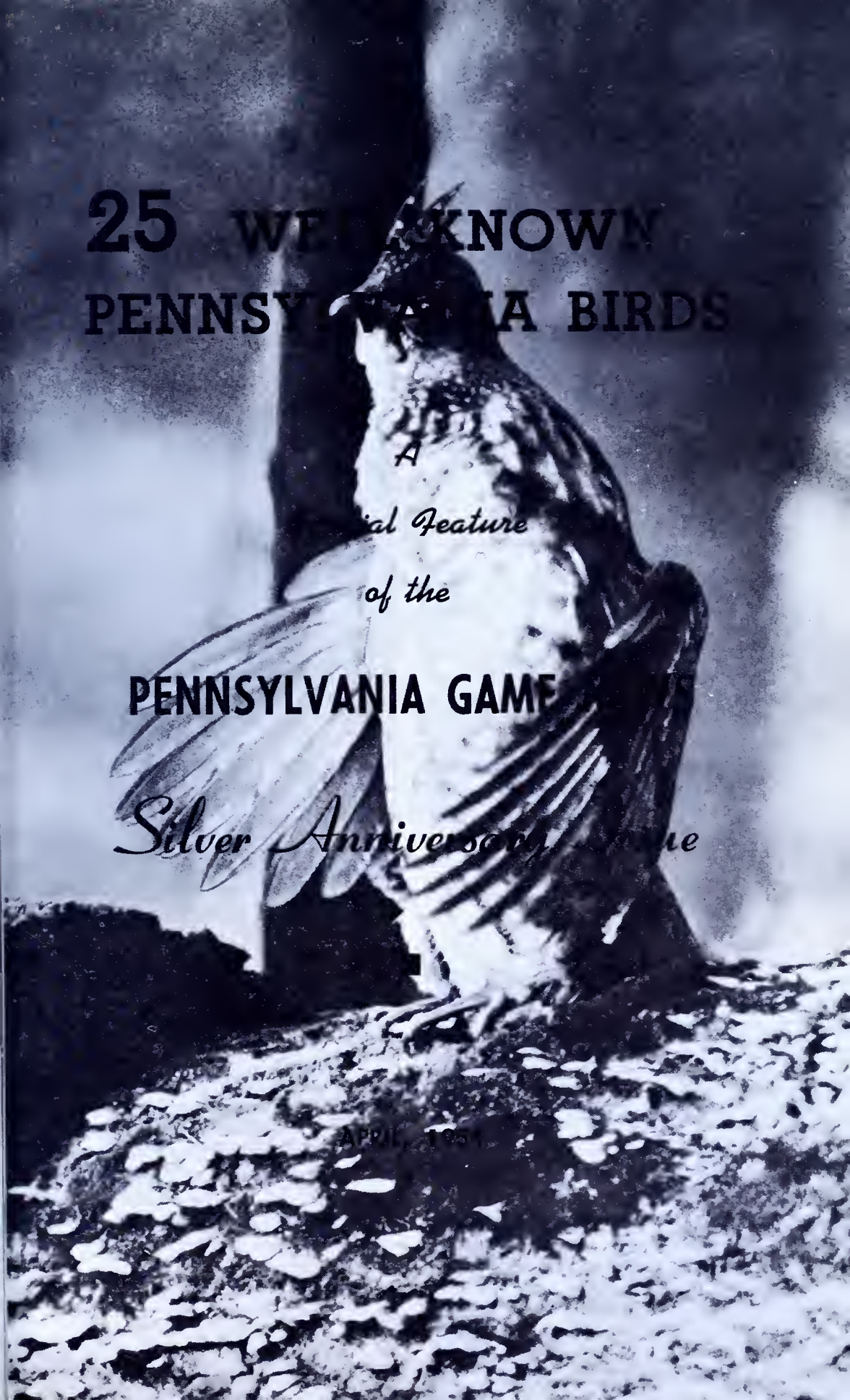
24. **Q. Must I plug my pump or automatic gun to limit it to 3 shots for upland game hunting?**

A. Not necessarily. The present Game Law provides that pump shotguns or automatics may not contain more than three shells at one time in the magazine and chamber combined, when used for hunting wild birds or animals except big game. Repeating shotguns need not be plugged as long as the 3-shell limit is observed; but as a safety measure, it would be best to plug them.

25. **Q. Is it legal to hunt rabbits with a .22 Cal. revolver?**

A. Yes, there is nothing in the present Game Law to forbid it. You must not use an automatic pistol for that purpose, as they are unlawful for hunting wild birds and animals in Pennsylvania.




25 WELL-KNOWN
PENNSYLVANIA BIRDS
A
Special Feature
of the
PENNSYLVANIA GAME
Silver Anniversary Issue
APRIL, 1951



PGC Photo by Cady

RINGNECK PHEASANT

Native of Asia; introduced into Pennsylvania 1915. Favorite habitat —grain-fields, meadows, bushy fencerows, open marshes, old pastures. Nest on ground, in grasses; 6-12 olive-buff eggs; young leave nest at hatching. Food—at least 56 known species of vegetable foods and 6 groups of insects; especially fond of corn.

RUFFED GROUSE

Our State bird. Average weight about 1½ pounds. Nests on ground, often at base of tree; 8-15 eggs, pale buff, usually unmarked; one brood per year; young leave nest when dry. Food—buds, fruits, leaves of aspen, birch, beech, maple; grapes; other fruits, nuts and berries. Population cyclic with peaks about every ten years. Maximum flight speed—about 22 m.p.h. Male famous for drumming.



PGC Photo by Batcheler

E. P. Haddon, Fish and Wildlife Service



BOBWHITE QUAIL

Popular game bird; permanent resident; favorite habitat—thickets, brushy and weedy edgs of woodlands, old weed fields. Nests on ground, in high grass; 10-15 eggs, pure white; young leave nests at hatching. Food —mostly insects and weed seeds. Famous for whistled call of "bob-white." Forms covcys in winter with 10 or more birds.

MALLARD DUCK

One of most common of all Pennsylvania ducks. Found on waterways throughout State; many permanent residents; migrants start arriving March 1, leaving November 1. Nest in depression under brush or in high grass near water, lined with down; 6-15 eggs, greenish to gray-brown. Food—grains, mosquito larvae, aquatic plants. Can fly 60 m.p.h.



Maslowski & Goodpaster



PGC Photo

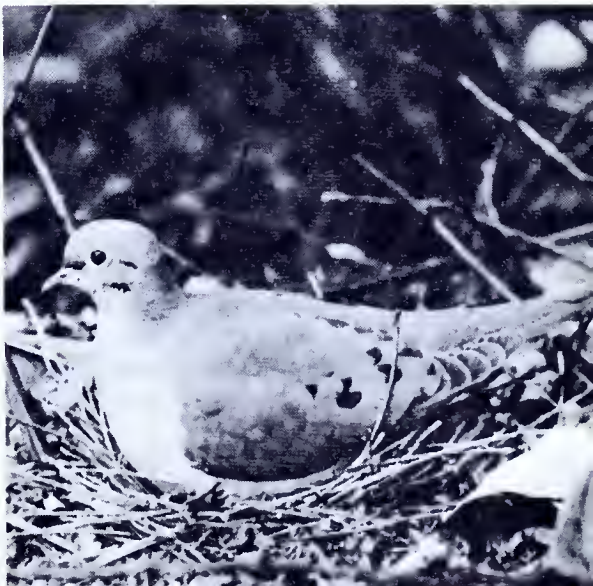
WILD TURKEY

Looks somewhat like domestic turkey except tips of tail feathers and upper tail coverts are chestnut color instead of white. Found throughout State in woodland areas. Nest on ground; 8-16 eggs, buffy-white to yellowish-buff, with small dots of clay-color. Food—seeds, nuts, grain, insects. Will often run, rather than fly, away from danger.

Maslowski & Goodpaster

MOURNING DOVE

Migratory game bird although many winter in Pennsylvania. Nest usually low in trees; 2 eggs, white; two or more broods. Food—grains and seeds. Famous for sad song. Speed—41 m.p.h.



CANADA GOOSE

Famous migrants, arriving mid-February to early April; leaving mid-October to mid-December; some permanent residents. Weight to 18 pounds. Adults mate for life, breed when 3 years old; 5-9 eggs, buff color; 1 annual brood. Gander defends goose and young; can be very dangerous. Food—roots, grain, insects, aquatic plants. Flies in V-shaped flocks.



PGC Photo by Cady



Mr. Burley, Fish & Wildlife Service

WOODCOCK

Migratory game bird. Found in alder thickets, swamps, other damp ground. Nest on or near ground; 3-4 brownish eggs; young leave nest when hatched, may be carried by parent. Food—mostly earthworms; other grubs, beetles, insects. Speed—13 m.p.h. Male famous for courtship flight. Flesh relished for fine flavor.

PGC Photo by Cady

SPARROW HAWK

Common and widely distributed summer resident from March 10-Nov. 15; fairly common winter resident. Smallest of all Pa. hawks; not much larger than robin; commonly seen perching on telephone wires. Nest in tree cavity; 3-7 buff to brownish eggs, heavily spotted with reddish brown. Food — principally insects and mice. Protected in Pennsylvania.





Allan D. Cruickshank from
National Audubon Society

SCREECH OWL

Only small owl with ear-tufts. Common permanent resident. Two color phases—red and gray. Nest in tree cavity, often in orchard; 4-6 white eggs. Food—chiefly mice and insects. Famous for call which is not "screech" but mournful cry. Often comes into cities and towns.



Allan D. Cruickshank from
National Audubon Society

TURKEY VULTURE

Common summer resident throughout State; many winter here. Largest "high-soaring" bird except for eagle; found generally in farming areas. Lays two, white eggs on ground, in hollow stump or under rocks; young in nest about two months. Food—mostly carrion, detected at great height by sight. Flight speed—to 21 m.p.h.

Maslowski & Goodpaster



KILLDEER

Common plover of Pennsylvania farmlands; summer resident from mid-March to mid-November. Favorite habitat old pastures, plowed fields, along streams. Nest in depression on ground; 4 buff-white eggs with chocolate spots or scrawls. Food—largely insects and earthworms. Flight speed—55 m.p.h.



Hal H. Harrison from National Audubon Society

WHIPPOORWILL

Summer resident from April 20 to September 30; found only in deep woodlands. Famous for call on summer evenings. Two white eggs laid on leaves or ground. Food—entirely insects, including moths, mosquitoes, June beetles, gnats. Never flies high in sky like nighthawk.

RUBY-THROATED HUMMINGBIRD

Our smallest bird; common summer resident from May 1 to October 1. Found in open woodlands, orchards, often in urban gardens. Nest—small, dainty structure made of plant-down, lichens, cobwebs fastened to tree branch 4 to 30 feet above ground; 2 white eggs. Food—nectar and insects. Flight speed—55 m.p.h.; wing beat 50-80 times per second.



Hal H. Harrison

Allan D. Cruickshank from National Audubon Society



DOWNY WOODPECKER

Smallest true woodpecker; permanent resident; found almost anywhere trees grow. Nest—cavity in dead stub, usually 15-30 feet from ground; entrance about 1½ inches; 4-6 glossy white eggs. Food—almost entirely insects; easily attracted to feeding trays, fond of suet.

PHOEBE

Common summer resident from mid-March to November. Found along borders of wooded or bushy streams, about farms, usually near stream or pond. Nest under bridge. or rock ledge, under porch roof; made of moss, mud covered, well lined; 3-6 white eggs. Food—almost entirely insects; one of most valuable birds.



George H. Harrison



Allan D. Cruickshank from National Audubon Society

BARN SWALLOW

Common summer resident from mid-April to late August or early September. Found in open country, farmlands; usually near water. Nest a cup of mud, lined with feathers and a few grasses; built upon rafter on inside of barn or other building; eggs: 3-7, white, spotted with brown. Food—entirely insects. Flight speed—to 46 m.p.h. Only swallow with deeply forked tail.

Roger Tory Peterson from National Audubon Society



MEADOWLARK

Common summer resident from mid-March to November; some winter residents. Found in fields and meadows. Nest in open fields; built of grasses, usually with roof; 3-6 white eggs, spotted with reddish brown. Food—almost entirely insects, most of which injurious to crops; fall food—weed seeds.

CROW

Common year round resident; probably best known Pennsylvania bird except for robin. Found everywhere. Nest—bulky structure of twigs, moss, leaves; lined with hair, grape-vine bark, moss; placed 20-60 feet from ground in trees; eggs: 3-6 light bluish green, heavily spotted with brown and gray. Food—enormous quantities insects, carrion, weed seeds, birds' eggs, grain, mice, corn.



PGC Photo by Cady



Allan D. Cruickshank from National Audubon Society

BLUEJAY

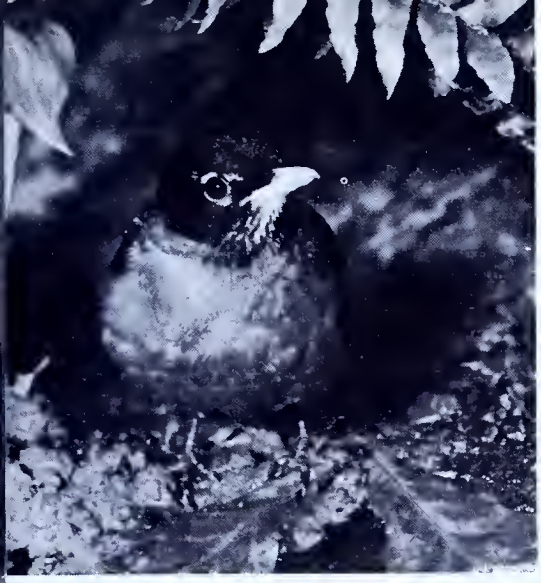
Permanent resident; found in forests, about farms, in villages and parks. Nest—bulky mass of twigs, roots, weed-stalks; placed 10-30 feet from ground, often in conifer; eggs: 3-6 pale gray green, heavily spotted with brown and gray. Food—insects, spiders, snails, fish, frogs, birds and their eggs, nuts and acorns. Flight speed—20 m.p.h.

Allan D. Cruickshank from National Audubon Society

HOUSE WREN

One of most popular Pennsylvania birds; common summer resident from mid-April to late September. Nest—in man-made bird houses but also in natural cavities; bulky mass of twigs, lined with feathers; eggs: 5-9 pinkish white, finely spotted and wreathed with reddish brown; 1-2 broods per year. Food—largely insects.





Allan D. Cruickshank from National Audubon Society

ROBIN

Probably most popular Pennsylvania bird; found everywhere; some year round residents, others migrate March-November. Nest—neat cup of grasses, weed stalks, string, etc., with inner lining of mud; placed in trees, under a roof. Eggs—3-5, blue; incubation 11-14 days; 2-3 annual broods. Food—largely earthworms; also insects, fruits and berries.

BLUEBIRD

The "harbinger of spring"; common summer resident from early March to November; casual in winter. Found chiefly in cultivated areas. Nest—of grasses, in tree cavity or birdhouse, 5-20 feet from ground. Eggs—4-6, light blue; incubation for 12 days by both parents; 2-3 annual broods. Food—mostly insects, some weed seeds and wild fruit. Starlings drive bluebirds from nesting sites.



Hal H. Harrison

Allan D. Cruickshank from National Audubon Society



RED-WINGED BLACKBIRD

Common summer resident from mid-March to early November; found in marshes, low, wet meadows; around streams and lakes. Nest—neatly woven basket of dry grasses, suspended between cattail stalks a few feet above water or ground. Eggs—3-6, pale blue, spotted and scrawled with black; incubation 10-14 days; 1-2 annual broods. Food—largely insects, grains.



Maslowski & Goodpaster

CARDINAL

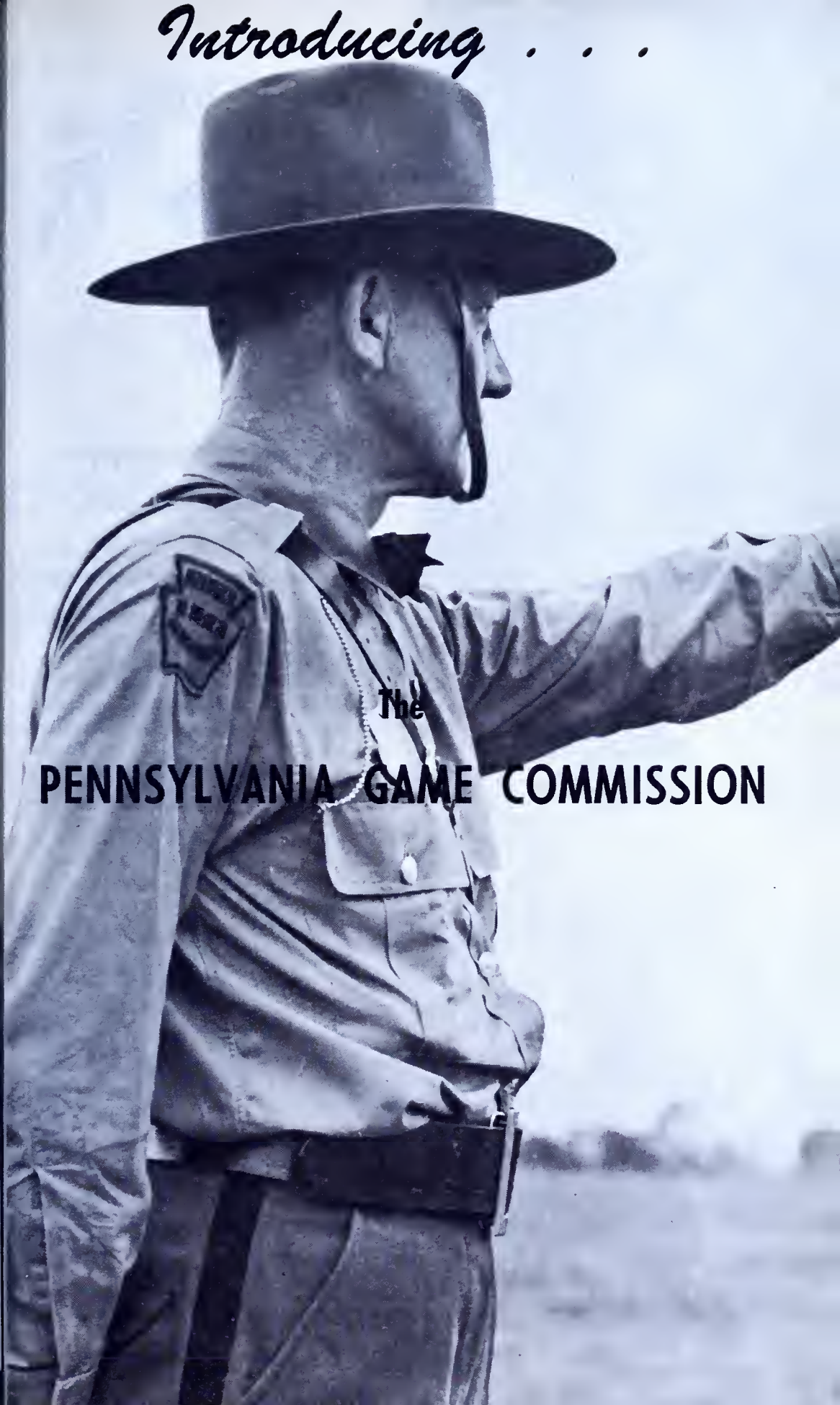
Permanent resident; popular visitor to winter feeding stations. Nest—neat, thin cup of wood-stalks and grasses, lined with fine grasses or hair. Eggs—3-4, white, spotted and speckled with lilac and gray; incubation 12 days. Food—seeds, wild fruit, grains, insects.

WANT TO HELP GAME AND SONGBIRDS?

25 *Things You Can Do*

1. Build and erect bird houses.
2. Build and erect feeding trays or other devices to feed songbirds in winter.
3. Build and erect bird baths in summer.
4. Build corn-crib type wild turkey feeders, place them along spring-runs in the forest, and keep them filled with ear corn in the winter and early spring.
5. Build a wood duck nesting box and place it in suitable location.
6. Raise pheasants in the Commission's Day-old Pheasant Chick program. See your local Game Protector for details.
7. Plant a multi-flora rose hedgerow to provide protective and nesting cover for game birds.
8. Plant aquatic plants like duckweed, smartweed, wild rice, sago pondweed, etc. for wild waterfowl.
9. Learn to identify bird nests by making a collection of them in the fall.
10. Control stray cats and other predators.
11. Collect discarded Christmas trees and make them into shelters for game and song birds in winter.
12. Make and erect a suet feeder in winter.
13. Make a check-list of birds seen about your home or farm.
14. Make a bird calendar. Keep a record of the dates when migratory birds arrive in your yard or farm in the spring and leave in the fall.
15. Prevent destruction of eggs during the nesting season. Build cat-guards on nest trees; locate and mark pheasant and quail nests and encourage farmers to mow around them.
16. Encourage farmers to leave a few rows of corn standing in winter for feeding game and songbirds.
17. Collect and place into containers nesting materials for birds such as yarn, pieces of string, scraps of cloth, etc.
18. Learn to identify beneficial, protected hawks in Pennsylvania and encourage others not to shoot them.
19. Make and distribute posters urging people to conserve wild birds.
20. Give a short talk on bird conservation before your school class or other civic group.
21. Make a bird conservation exhibit and display it in a store window, school or public library, or other public place, especially during National Wildlife Week in March and on Bird and Arbor Day, April 9th each year.
22. Prevent forest fires and field fires. Organize fire fighting crews to help control these destroyers of bird nests and eggs.
23. Be sure to return any band found on a dead bird. Send it to the Game Commission or to the U. S. Fish & Wildlife Service, along with information on when and where you found the bird.
24. Encourage drivers of vehicles in which you ride to give wild birds a "brake" on the highways. Ask them to sound the horn if they see pheasants or other birds walking across the highway.
25. Plant shrubs and other trees, grasses, and vines that will produce more food and cover for wild birds.

Introducing . . .



The

PENNSYLVANIA GAME COMMISSION



Hon. John S. Fine



COMMONWEALTH OF PENNSYLVANIA

JOHN S. FINE, *Governor*

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin

Dr. Logan J. Bennett
Executive Director

Left to right: Andrew C. Long, Ross L. Leffler, B. K. Williams, Col. Nicholas Biddle, John C. Herman. Dr. Logan J. Bennett, G. I. Phillips, H. L. Buchanan.



Harrisburg Office

Executive Office

Dr. Logan J. Bennett, *Executive Director*
Miss Esther M. Gill, *Special Secretary*
Wilbur M. Cramer, *Assistant to Executive Director*
Robert D. Reed, *Director of Public Relations*
Miss Ida M. Boyd, *Secretary*

Administration Bureau

Rollin Heffelfinger, *Director*
Mrs. Dorothy E. Sheesley, *Senior Secretary*

ACCOUNTING & SERVICE DIVISION

Nelson E. Slaybaugh, *Comptroller*
Miss Mary E. Sides, *Secretary*
Dewey R. Long, *Statistician*
Mrs. Dorothea C. Parsons, *Clerk-Typist*

ACCOUNTING SECTION

Howard H. Fraim, *Assistant Comptroller*
John G. Hoover, *Accountant*
Louis B. Geiger, *Accountant*
A. C. DeFerie, *Accountant*
Marlin E. Kohler, *Accountant*
Mrs. Myriam Clippinger, *Acct. Machine Operator*
Miss Thelma M. Boyer, *Acct. Machine Operator*
Miss Gertrude A. Reeder, *Stenographer-Clerk*
Miss Lucille M. Lentz, *Clerk*
Charles Kistler, *Clerk*

SERVICE SECTION

Clarence J. Weaver, *Purchasing Agent*
Miss R. Evelyn Kachik, *Secretary*
Lindsay M. Griffin, *Asst. Section Supervisor*
Samuel C. Schaffer, Jr., *Shipping Clerk*
Jay M. Steigelman, *Messenger*
Calvin Perrin, *Machine Operator*
John R. White, *Mail Clerk*

Wildlife Research Division

Roger M. Latham, *Chief*
Mrs. Mary S. Wallace, *Secretary*
Glenn L. Bowers, *Cottontail Rabbit Study*
Stanley E. Forbes, *White-tailed Deer Study*
Robert L. Snyder, *Wild Turkey Study*
Stephen A. Liscinsky, *Woodcock Management Study*
Harvey A. Roberts, *Waterfowl Study*
C. R. Studholme, *Evaluation of Wildlife Food Production Efforts*
Wilmer C. Richter, *Right-of-Way Management Study*

Wildlife Conservation Bureau

J. C. Gilford, *Director*
Mrs. Dorothy J. Tyson, *Senior Secretary*
Timothy W. Minahan, *Office Assistant*
Robert E. Latimer, *Waterfowl Coordinator*
W. C. Shaffer, *Special Assistant*

Wildlife Protection Division

Thos. F. Bell, *Chief*
Hayes T. Englert, *Asst. Chief*
Charles F. Stambaugh, *Chief Clerk*
Mary P. Graham, *Secretary*
Margaret M. Reeser, *Secretary*
Mrs. Eva Taylor, *Secretary*

PREDATOR CONTROL SECTION

Paul L. Failor, *Supervisor*

BOUNTY CLAIMS SECTION

H. L. Plasterer, *Supervisor*
Hugh H. Groninger, *Asst. Supervisor*
Mark P. Motter, *Asst. Supervisor*
Mrs. Mary E. Fisher, *Clerk-Typist*

Game Propagation Division

Earl S. Greenwood, *Chief*
Ralph E. Britt, *Asst. Chief*
Mrs. Doris C. Withers, *Secretary*



Harrisburg Office

First row, left to right: Fraim, Luttringer, Johns, Latham, Slaybaugh, Cramer, Heffelfinger, Bennett, Gilford, Reed, Bell, Freeburn, Greenwood, Golden, Englert.

Second row: Weaver, Batcheler, Koppenhaver, Koehler, Wallace, Sides, Boyd, Sheesley, Gill, Tyson, Taylor, E., Graham, Bixler, Withers, Sedam, Britt.

Third row: Long, Kachik, Hoover, J., Boyer, Geiger, Reeder, DeFerie, Fisher, Stambaugh, Wolfe, Minahan, Reeser, Shaffer, Lichtenberger.

Fourth row: Kohler, Parsons, Cady, Lentz, Kistler, Clippinger, Lollich, Ross, Taylor, B., Hoover, F., Plasterer, Bubb, Failor.

Fifth row: White, Motter, Groninger, Griffin, Schaffer, Steigelman, Perrin, Mackey, Kase, Cohen, Vukovich, Hoover, O

Conservation Education Division

Leo. A. Luttringer, Jr., *Chief*

Mrs. Virginia E. Koehler, *Secretary*

George W. Koehler, *Wildlife Exhibitor*

PUBLICATION SECTION

Willard T. Johns, Jr., *Editor*

Miss Mary E. Koppenhaver, *Secretary*

Mrs. Zelda E. Ross, *Circulation Secretary*

Mrs. Dorothy S. Bubb, *Asst. Circulation Secretary*

Mrs. Frances E. Hoover, *Graphotype Operator*

Oliver M. Hoover, *Clerk*

CONSERVATION RELATIONS SECTION

Delbert L. Batcheler, *Photographer*

Ralph M. Cady, *Asst. Photographer*

Land Utilization Division

C. C. Freeburn, *Chief*

Robert S. Lichtenberger, *P-R Coordinator*

Miss Burnadetta I. Bixler, *Secretary*

FOOD AND COVER SECTION

John B. Sedam, *Supervisor*

FARM-GAME COOPERATIVE SECTION

M. J. Golden, *Supervisor*

LAND TITLE AND RECORD SECTION

E. Bruce Taylor, *Supervisor*

Miss Dorothy M. Wolfe, *Secretary*

ENGINEERING UNIT

P. M. Lollich, *Senior Game Land Engineer*

L. A. Mackey, *Head Draftsman*

Louis Cohen, *Draftsman*

Nicholas I. Vukovich, *Draftsman*
(Branch Office—Brookville)

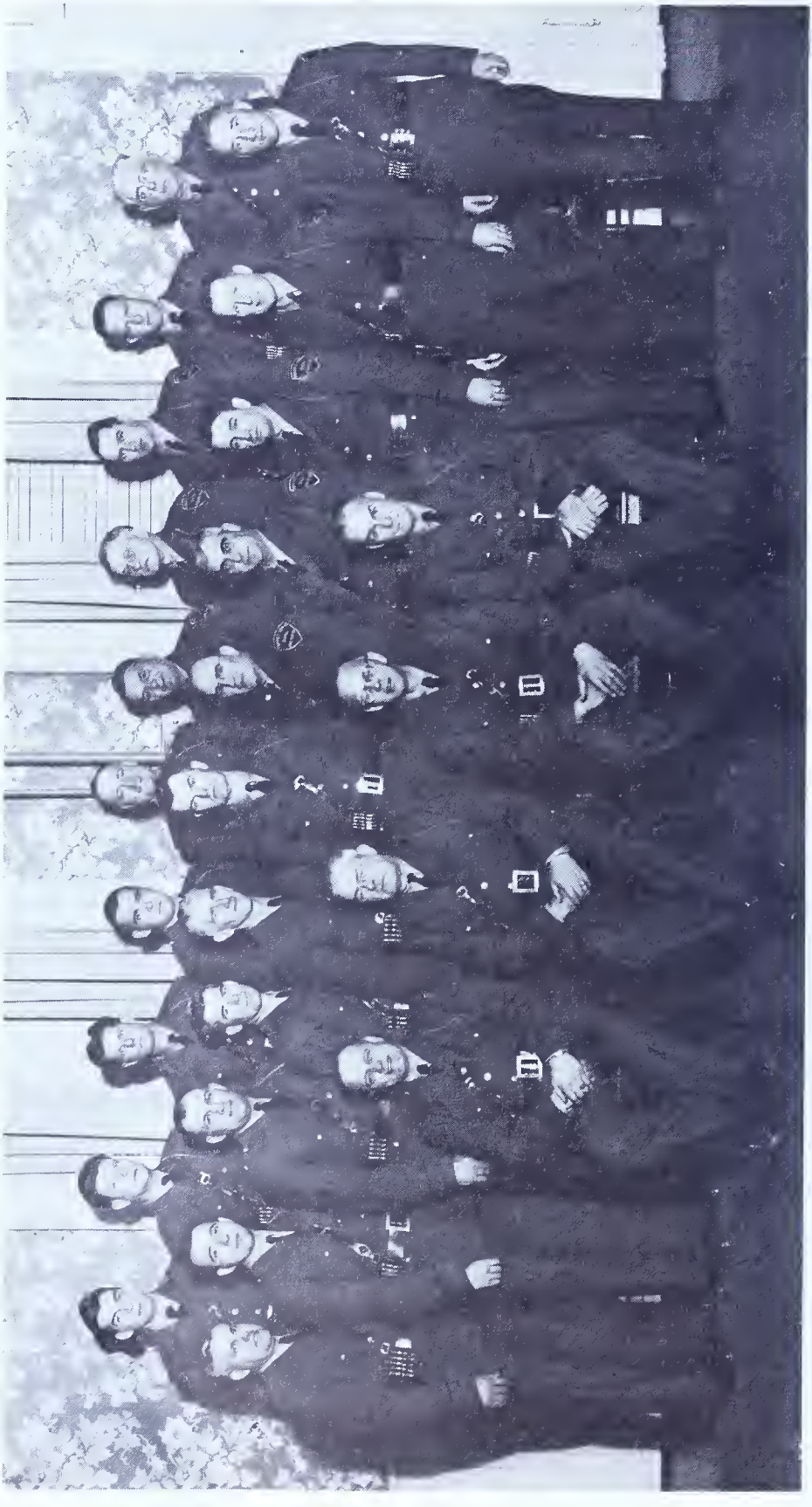
James S. Arthurs, *Game Land Engineer*

Randall Webster, *Game Land Engineer*

Wildlife Research Division

Left to right, First Row: Richter, Wilmer; Latham, Roger M.; Studholme, C. R.; Second Row: Bowers, Glenn; Liscincky, Stephen; Snyder, Robert; Roberts, Harvey; Forbes, Stanley.





Northwest Division

First row, left to right: Parlaman, Campbell, Reynolds, Smith.
Second row: Hooper, Miller, P. R., Miller, G. W., Lee, Overturf, Titus, Denton, Ruth, Biondi, Decker, Simpson.
Third row: Milford, Ellenberger, Portzline, Putnam, Sickles, Keppler, Benson, Schake, Borger, Haney.



Northwest Division

DIVISION HEADQUARTERS

422 13th Street, Franklin
P. O. Box 668. Phone: 726

Division Supervisor . . . . . TEMPLE A. REYNOLDS
Wildlife Protection Assistant . . . . . WILLIAM T. CAMPBELL
Conservation Education Assistant . . . . . ROBERT D. PARLAMAN
Land Utilization Assistant . . . . . EARL E. SMITH
Area Leader (P-R) . . . . . EGBERT G. MUSSER
Stenographers . . . . . MAXINE SPANGLER
CATHERINE J. WALSH

District Game Protectors

BUTLER COUNTY

Woodrow E. Portzline 4600
317 New Castle Street, Slippery Rock
Paul R. Miller 3-8392
R. D. 2, Butler

CLARION COUNTY

Donald M. Schake 619R11
R. D. 1, Knox
William D. Denton 730
1011 East Main Street, Clarion

CRAWFORD COUNTY

Raymond M. Sickles 2-2531
Linesville
George W. Keppler 3-2461
255 Locust Street, Meadville
John Putnam . . . . Titusville 3-6471
Main Street, Hydetown

ERIE COUNTY

William E. Lee 2953
Box 178, 164 Pearl Street, Albion
Clifford L. Ruth 8-4105
2023 Wagner Avenue, Erie
Elmer D. Simpson 424
63 South Street, Union City

FOREST COUNTY

Carl B. Benson 189
Box 86, Tionesta
George W. Miller . . . . Waverly 7-6758
Marienville

JEFFERSON COUNTY

Lester J. Haney 366R
Box 403, Brookville
Robert F. Ellenberger 7491
Big Run

LAWRENCE COUNTY

Calvin A. Hooper, Jr. . . . Oliver 4-0355
R. D. 4, New Castle

MERCER COUNTY

Arthur T. Biondi 718
Apartment 6, Smith Bldg., Mercer

VENANGO COUNTY

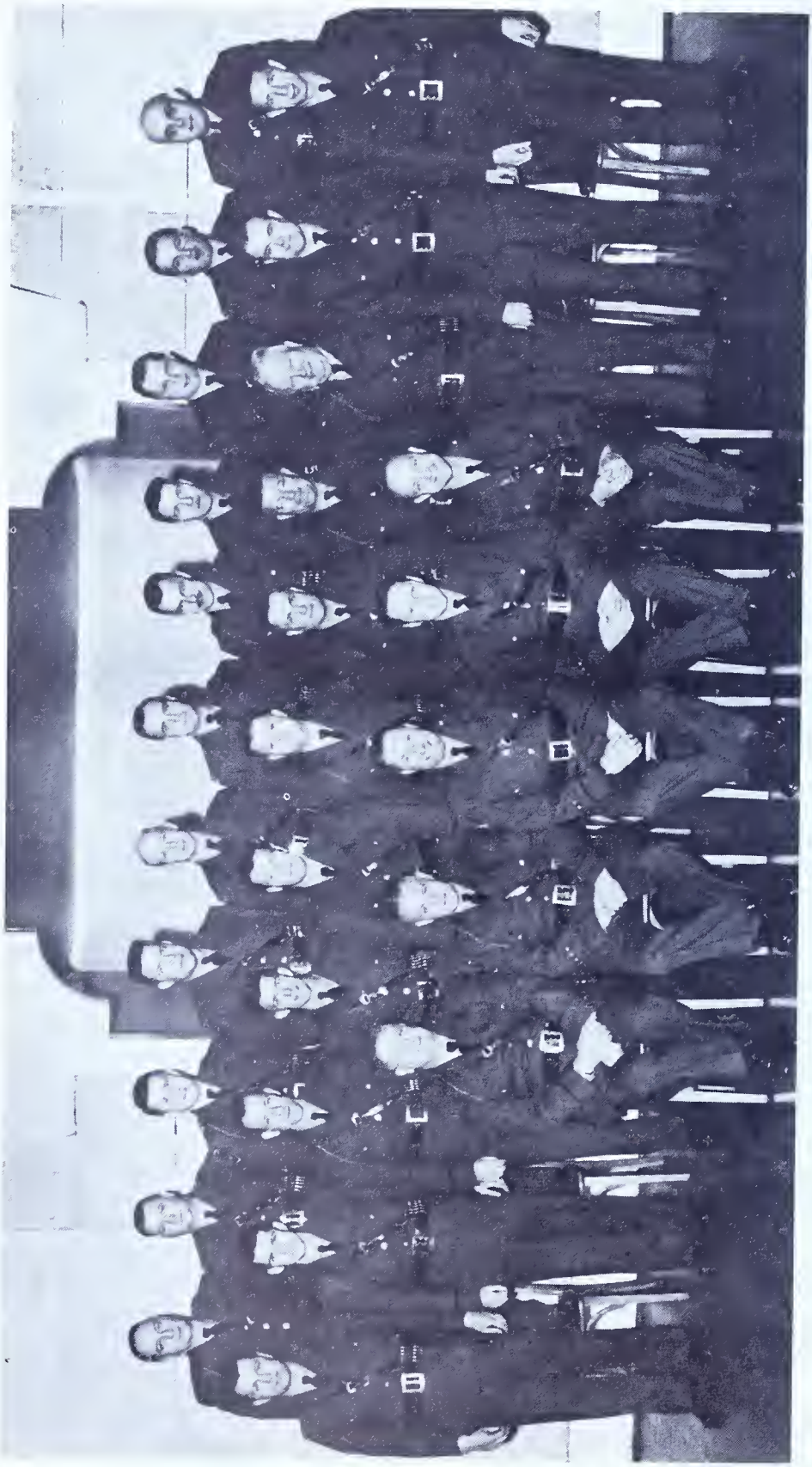
Clyde W. Decker 1472R
27 Gilfillan Street, Franklin
Leo E. Milford 5-3593
208 Seeley Avenue, Oil City
Edward M. Borger . . . Franklin 2411L
R. D. 2, Polk

WARREN COUNTY

George H. Burdick . . . Ivanhoe 4-3311
Box 266, Tidioute
William R. Overturf 6-2901
Box 352, Youngsville
David R. Titus . . . . Warren 1879
Box 641, 213 Connecticut Avenue

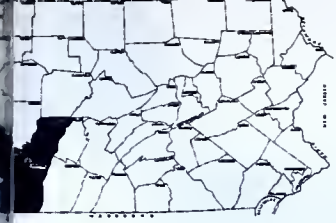
Left to right:
Maxine Spangler, Catherine Walsh.





Southwest Division

First row, left to right: Richards, Wells, Norris, Orr, Bowman.
Second row: Shaffer, Miller, Blair, Catherman, Rea, Zaycosky, Servey, Church, Cox, Hiller, Maholtz.
Third row: Brion, Ziros, Hertz, Heacox, DeLong, Hay, Mosteller, Cowden, Kinley, Doerzbacher, McGregor.



Southwest Division

DIVISION HEADQUARTERS

331 East Main Street, Ligonier
P. O. Box A. Phone: 519

Division Supervisor . . . . . GEORGE L. NORRIS
Wildlife Protection Assistant . . . . . M. B. WELLS
Conservation Education Assistant . . . . . RICHARD W. ORR
Land Utilization Assistant . . . . . E. R. RICHARDS
Area Leader (P-R) . . . . . GILBERT L. BOWMAN
Stenographers . . . . . VINN M. LIZZA
RUTH MIEDEL

District Game Protectors

ALLEGHENY COUNTY

C. R. Kinley . . . . . Edison 7-3212
Box 627, 2404 7th St., New Kensington
F. H. Servey . . . . . Imperial 8504
Box 108, Clinton

ARMSTRONG COUNTY

William H. Shaffer 42-6297
Box 211, R. D. 3, Kittanning
W. J. Brion 43-2071
Box 129, R. D. 3, Kittanning

BEAVER COUNTY

J. B. McGregor 1508
Box 186, 230 Dravo Street, Beaver

CAMBRIA COUNTY

G. A. Miller 485-R
907 Chestnut Avenue, Barnesboro
J. L. DeLong 230-J
516 Lake Street, Ebensburg
L. D. Mostoller 5-6381
917 Annie Street, Johnstown

FAYETTE COUNTY

J. R. Hiller 8-8601
435 Braddock Avenue, Uniontown
J. F. Blair . . . . Indianhead 19-R-14
Mill Run

GREENE COUNTY

William E. Cowden 1438
Box 428, 1050½ E. High St., Waynesburg
A. J. Ziros 2120
Box 304, 304 Bailey Avenue, Carmichaels

INDIANA COUNTY

A. J. Zaycosky 5-8989
Box 622, 1691 Water Street, Indiana
B. W. Catherman 5-6510
32 North Ninth Street, Indiana

SOMERSET COUNTY

G. E. Hay 6785
Box 61, R. D. 2, Somerset
E. W. Cox 6701
R. D. 5, Somerset
R. V. Rea 4921
506 Page Street, Confluence

WASHINGTON COUNTY

R. E. Doerzbacher 6735
Box 56, 149½ Springfield Avenue, Washington
G. T. Church 4978
400 E. Chestnut Street, Washington

WESTMORELAND COUNTY

D. W. Heacox 2473
402 Maple Street, Irwin
Joseph M. Maholtz 2010
211 College Avenue, Mt. Pleasant
Charles Hertz 3913
R. D. 1, Ligonier

Vinn M. Lizza, left; Rith Miedel, right.





Northcentral Division

First row, left to right: Gleason, Sherman, Kern, Crooks.
Second row: Morningstar, Osman, Reed, Shuler, Hancock, Kirkpatrich, Keiper, Kelsey, Evancho Shirey, Sinsabaugh, Ostrum, Logan, VanOrder, Stidd, Wood.
Third row: Kistner, Laird, Spahr, Neely, Erickson, Ranck, Cyphert, Whippo, Carpenter Carlson, Grabany.



North Central Division

DIVISION HEADQUARTERS

214½ East Water Street, Lock Haven
P. O. Box 429. Phone: 5400

Division Supervisor . . . . . MAURICE E. SHERMAN
Wildlife Protection Assistant . . . . . LEROY GLEASON
Conservation Education Assistant . . . . . MILLARD M. CROOKS
Land Utilization Assistant . . . . . SAMUEL J. KERN
Stenographers . . . . . LAURA M. LINGLE
PHYLLIS J. LENTVORSKY

District Game Protectors

CAMERON COUNTY

Norman L. Erickson 2-2131
R. D. 1, Prospect Park, Emporium

CENTRE COUNTY

Robert H. Sphar 177
Box 573, R. D. 1, Philipsburg
Charles M. Laird . . . Bellefonte 4102
Box 68, Milesburg
Sam B. Reed 3592
Box 205 Pine Grove Mills, State College
Joseph W. Kistner 921
Box 94, Howard

CLEARFIELD COUNTY

Claude B. Kelsey . . . Luthersburg 2468
Box 33, Troutville
Theodore C. Carlson 5-3011
Box 354, Clearfield
Michael Grabany 3773
606 George Street, Houtzdale

CLINTON COUNTY

Charles F. Keiper 765
1612 Erie Avenue, Renovo
Oscar S. Hake, Jr. . . . Lock Haven 5665
415 Frederick Street, Flemington

ELK COUNTY

Vern A. Van Order . Johnsonburg 2-1024
R. D. 1, Wilcox
Gerald D. Kirkpatrick . . Ridgway 2-4859
Box 81, Portland Mills
L. L. Logan 4-2948
R. D. 1, St. Marys

LYCOMING COUNTY

Michael Evancho 1137-M
117 Oak Street, Jersey Shore
Robert L. Sinsabaugh . . Brookside 2122
Box 24, English Center
Paul A. Ranck 2-7604
1207 Baldwin Street, Williamsport
Levi R. Whippo . . . . Loyalsock 2962
Proctor Star Route, Williamsport
Raymond H. Morningstar 2381
253 Montgomery Street, Montgomery

McKEAN COUNTY

William J. Carpenter 2961
Box H, Main Street, Mt. Jewett
William H. Shirey 686-R-3
R. D. 1, Smethport
Cecil D. Hancock 2-2524
112 Francis Avenue, Port Allegany

POTTER COUNTY

Rozell A. Stidd 389
410 N. East Street, Coudersport
Max N. Ostrum 6259-R-2
R. D. 2, Galeton
William D. Neely 2241
Box 724, Thorn Street, Austin

TIOGA COUNTY

Gerald W. Cyphert 103-R-14
Box 411, Westfield
James A. Osman 274W
Box 345, 88 Seventh Street, Mansfield
Leslie H. Wood 6111
3 Eberenz Street, Wellsboro

UNION COUNTY

John S. Shuler 1-5451
Box 542, 721 Market Street, Lewisburg

Laura M. Lingle, left;
Phyllis J. Lentvorsky, right.





Southcentral Division

First row, left to right: Logue, Sheaffer, Jenkins, Chick,
Second row: Holtzapple, Russell, Lesnett, Thrush, Bushman, Smith, Getman, Welch, Spahr, Dittmar.
Third row: Woodward, Ganster, Bretz, Metz, Alexander, Campbell, Troutman, Crooks, Jarrett, Turley, Smith.



Southcentral Division

DIVISION HEADQUARTERS

327 Penn Street, Huntingdon
Phone: 872

Division Supervisor . . . . . ARTHUR G. LOGUE
Wildlife Protection Assistant . . . . . LESTER E. SHEAFFER
Conservation Education Assistant . . . . . JOSEPH S. CHICK
Land Utilization Assistant . . . . . FRANCIS E. JENKINS
Stenographers . . . . . ALICE G. WEAVER
ELSIE M. IRVIN

District Game Protectors

ADAMS COUNTY

John R. Spahr . Mt. Holly Springs 904R2
R. D. 2, Gardners
Leo E. Bushman 463
264 Baltimore Street, Gettysburg

BEDFORD COUNTY

John J. Troutman . Hollidaysburg 5-0409
R. D. 2, Portage
E. M. Woodward 494
129 Walnut Street, Bedford
John S. Dittmar 107
Loysburg
Orrie E. Smith
R. D. 1, Amaranth

BLAIR COUNTY

Dean M. Crooks 8066
305 S. 2nd Street, Bellwood
Roland F. Turley 367
418 Cherry Street, Roaring Spring

CUMBERLAND COUNTY

George D. Bretz 166Z
334 Walnut Street, Shippensburg
Homer H. Thrush . . . Carlisle 1923W
High Street, Boiling Springs

FRANKLIN COUNTY

A. C. Ganster 1882J
530 E. Catherine Street, Chambersburg
Edward W. Campbell . . St. Thomas 25
Fort Loudon

FULTON COUNTY

C. E. Jarrett 158R14
McConnellsburg

HUNTINGDON COUNTY

Ross G. Metz . . . . Alexandria 9-4626
Petersburg
Dean M. Lesnett, Sr. 1408
1431 Moore Street, Huntingdon
L. B. Welch 2511
Box 59, Three Springs

JUNIATA COUNTY

William M. Getman 2971
Box 216, Fairview Street, Port Royal

MIFFLIN COUNTY

George B. Smith 2790
625 W. 4th Street, Lewistown
Elmer L. Alexander 17
Belleville

PERRY COUNTY

Harold E. Russell 104
Box 256, 24 S. Carlisle Street, New
Bloomfield

SNYDER COUNTY

C. F. Walker . . . Beaver Springs 2349
Beavertown
Raymond E. Holtzapple 3612
Box 183, R. D., Middleburg

Left to right:
Elsie M. Irvin, Alice G. Weaver.

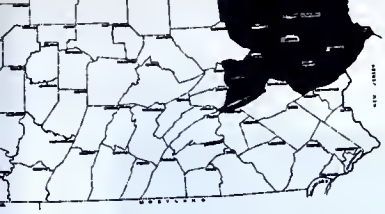




Northeast Division

First row, left to right: Hodge, Rosenkrans (deceased), Stainbrook, Ruha, Second row: Dieffenderfer, Laubach, Forche, Clouser, Craven, Benscoter, Roth, Myers, Lohmann, Yeager, Biehl, Schafer, Meehan, Molski.

Third row: Stanis, Day, Estep, Doebling, Lettie, Sprankle, Kriefski, Case, Sloan, Hagenbuch, Kish, Spencer, Fulmer.



Northeast Division

DIVISION HEADQUARTERS

987 Wyoming Avenue, Forty Fort
P. O. Box 1351. Phone: Kingston 76193

Division Supervisor . . . . . Carl C. Stainbrook
Wildlife Protection Assistant . . . . . William A. Hodge
Conservation Education Assistant . . . . . Vacancy
Land Utilization Assistant . . . . . Nicholas M. Ruha
Stenographers . . . . . Ludwina D. Runta
Margaret H. Preston

District Game Protectors

BRADFORD COUNTY

Rodman C. Case 263R2
R. D. 1, Troy
Norbert J. Molski 2081
R. D. 1, Wyalusing
George E. Sprankle 304W
Box 213, R. D. Canton

CARBON COUNTY

Duane E. Lettie 3397
Box 42, 127 Carbon Street, Weatherly
William E. Fulmer 306M
Box 27, 327 Mahoning Street, Lehighton

COLUMBIA COUNTY

Mark L. Hagenbuch 692
Box 283, 440 Spruce Street, Bloomsburg
Lewis H. Estep 7811
1237 W. Front Street, Berwick

LACKAWANNA COUNTY

Philip S. Sloan 33940
R. D. 1, Dalton
Stephen A. Kish . . . Glenwood 72753
1420 Grove Street, Avoca

LUZERNE COUNTY

George A. Dieffenderfer 581
41 Dorrance Avenue, Wyoming
John C. Behel . . . . . Valley 29724
76 Wyoming Street, Wilkes-Barre
Norman J. Forche 3551
c/o O'Gara's Inn, Conyngham

MONROE COUNTY

John Spencer 6565
Star Route, Mt. Pocono
John H. Doebling 3888
108 Ridgeway Street, East Stroudsburg

MONTOUR COUNTY

Bruce P. Yeager 1210
66 Queen Street, Northumberland

NORTHUMBERLAND COUNTY

Clyde E. Laubach 23402
Box 172, W. Center Street, Elysburg

PIKE COUNTY

Albert J. Kriefski . . . . Hawley 3408
Blooming Grove
John H. Lohmann 4765
Box 93, Elizabeth Street, Milford

SULLIVAN COUNTY

Robert K. Benscoter
R. D. 1, Forksville
Patrick W. Craven 29031
R. D. 2, Benton

SUSQUEHANNA COUNTY

Donald G. Day . . . . Hallstead 143R7
R. D. 4, Susquehanna
Casimir M. Stanis 34J1
Uniondale

WAYNE COUNTY

Theodore T. Schafer 870
R. D. 1, Honesdale
Robert H. Myers 559W
609 High Street, Honesdale

WYOMING COUNTY

Thomas W. Meehan 2632
R. D. 2, Mehoopany
Richard R. Roth 5287
Box 181, 48 Slocum Avenue, Tunkhannock

Ludwina D. Runta, left;
Margaret H. Preston, right.





Southeast Division

First row, left to right: Trexler, Brown, Stewart, Bachman, Miller.
Second row: Harter, Turner, Filkosky, McFarland, Eicholtz, Mace, Leinendecker, Moyer, Croft, McPeck, Woodring.
Third row: Carbenter, Fasching, Drasher, Haverstick, Shank, Glenny, Fackler, Wiggins, Geesaman, Rickert, Flexer, Shaver.



Southeast Division

DIVISION HEADQUARTERS

1009 N. 8th Street, Reading
Phone: 4-2661

Division Supervisor . . . . . Morris D. Stewart
Wildlife Protection Assistant . . . . . James A. Brown
Conservation Education Assistant . . . . . Donald E. Miller
Land Utilization Assistant . . . . . A. R. Bachman
Area Leader (P-R) . . . . . Roy W. Trexler
Stenographers . . . . . Julia C. Cartey
Lydia J. Ruddle

District Game Protectors

BERKS COUNTY

S. C. McFarland . . . . Leesport 63273
Centreport
H. H. Rickert 5894
R. D. 2, Kutztown
J. A. Leiendecker 2-1385
1507 Moss Street, Reading

BUCKS COUNTY

Edwin W. Flexer 966-M
232 E. Broad Street, Quakertown
S. Earl Carpenter 5168
84 Shewell Avenue, Doylestown

CHESTER COUNTY

Edward J. Fasching 1410
138 E. Lancaster Avenue, Downingtown
Peter J. Filkosky 5000
31 Dean Street, West Chester

DAUPHIN COUNTY

Harold F. Harter 278
434 Center Street, Millersburg
Paul H. Glenny 6-0496
214 N. 15th Street, Harrisburg

DELAWARE COUNTY

Daniel S. McPeek, Jr. Valley Brook 2486-R-1
R. D. 1, Locksley Road, Glen Mills

LANCASTER COUNTY

John M. Haverstick 5540
741 College Avenue, Lancaster
Wallace E. Woodring 3-2402
118 E. Chestnut Street, Ephrata
John P. Eicholtz 4231
Box 37, 25 Miller Street, Strasburg

LEBANON COUNTY

Elmer J. Turner 4-4701
Box 117, Mt. Gretna

LEHIGH COUNTY

William A. Moyer . . . Hemlock 5-3996
2024 Pennsylvania Street, Allentown

MONTGOMERY COUNTY

William E. Shaver . . Harleysville 3067
Box 13, Mainland
Donald L. Croft . . . . Osborn 5-0621
117 Manor Road, Hatboro

NORTHAMPTON COUNTY

Harold W. Wiggins 1462J
R. D. 2, Nazareth

PHILADELPHIA COUNTY

Donald L. Croft 0621
117 Manor Road, Hatboro

SCHUYLKILL COUNTY

Ralph L. Shank 3002
Box 11, 20 W. Pottsville Street, Pine Grove
Billy A. Drasher 17-R-22
R. D. 1, Tamaqua

YORK COUNTY

Stephen C. Mace 2566
154 N. Hartman Street, Manchester
Earl E. Geesaman 7-0043
R. D. 6, York
Daniel H. Fackler . . . Red Lion 3-7540
R. D. 1, Windsor

Left to right:
Julia C. Cartey, Lydia J. Ruddle.



Eastern Game Farm

R. D. 1, Schwenksville
Phone: 2351

Vernor T. Warfel, *Superintendent*
Joseph L. Budd, *Asst. Supt.*
Orvis G. Wagner, *Game Propagator*
William Lane, *Game Propagator*

Western Game Farm

R. D. 1, Cambridge Springs
Phone: 3323

Isaac C. Baumgardner, *Superintendent*
George R. Enlow, *Asst. Supt.*
Hadley O. Twombley, *Game Propagator*
Keith C. Hinman, *Game Propagator*
George W. Hodge, *Game Propagator*

Southwest Pheasant Hatchery

State Game Lands 137, Armstrong County
Phone: New Bethlehem 927R6

Clarence Wilkinson, *Asst. Supt.*

Loyalsock Game Farm

R. D. 2, Mountoursville
Phone: Loyalsock 2500

Charles Pfeiffer, *Superintendent*
Jack Anderson, *Asst. Supt.*
William G. Koehler, *Game Propagator*
Howard Hoffman, *Game Propagator*

State Wild Turkey Farm

Proctor Star Route, Williamsport
Phone: Loyalsock 2369

Leon P. Keiser, *Superintendent*
Charles H. Fox, *Game Propagator*
Byron R. Kinzer, *Game Propagator*
Eugene P. Nelson, *Game Propagator*

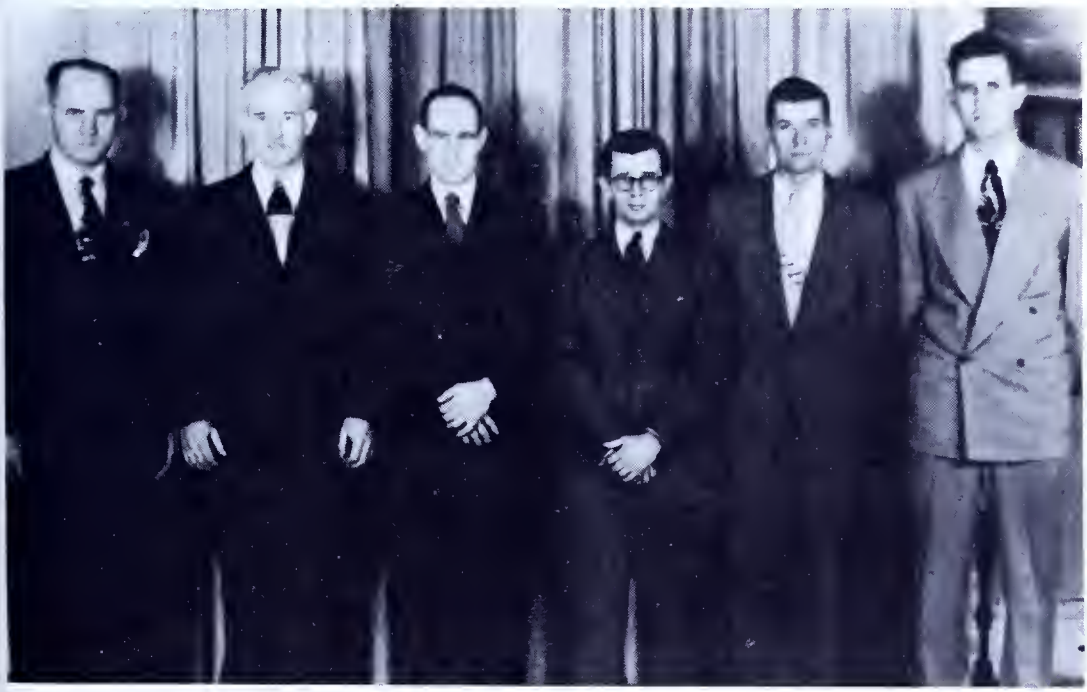


Eastern Game Farm

Left to right: V. T. Warfel, J. L. Budd, Wm. Lane, O. G. Wagner.

Western Game Farm & Southwest Pheasant Hatchery

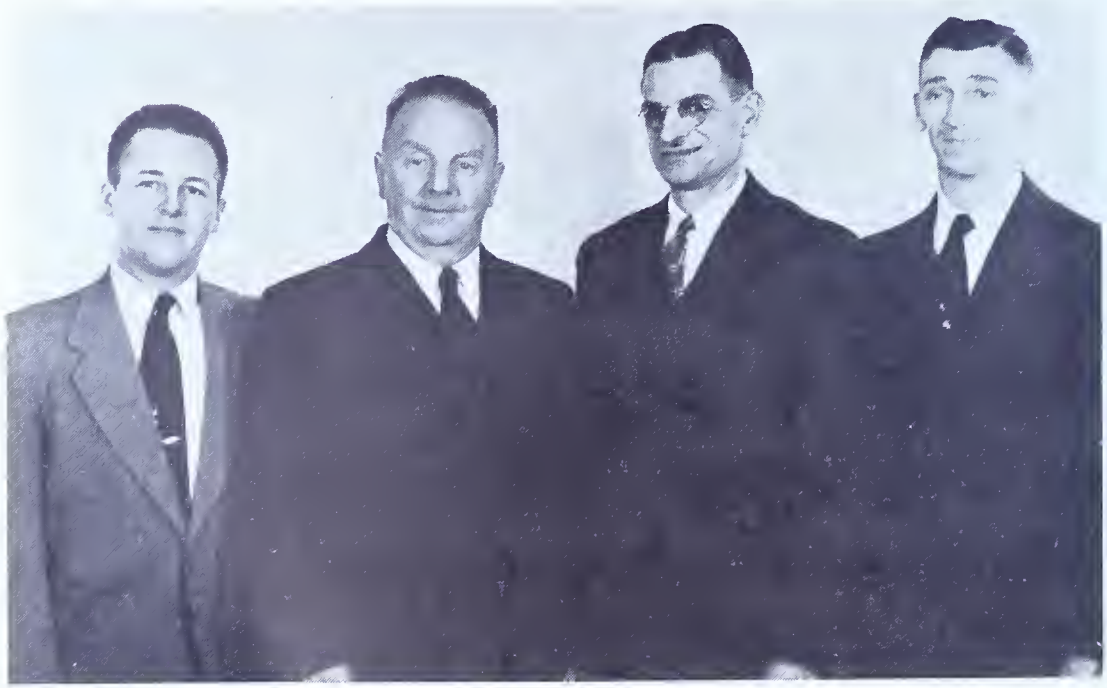
Left to right: I. C. Baumgardner, G. R. Enlow, H. O. Twombley, C. Wilkinson, G. W. Hodge, K. C. Hinman.





Loyalsock Game Farm
Left to right: W. G. Kohler, C. Pfeiffer, H. Hoffman, J. Anderson.

State Wild Turkey Farm
Left to right: E. P. Nelson, L. P. Keiser, C. H. Fox, B. R. Kinzer.



LEGAL BIG GAME KILL
1929 - THEN 1953 - NOW

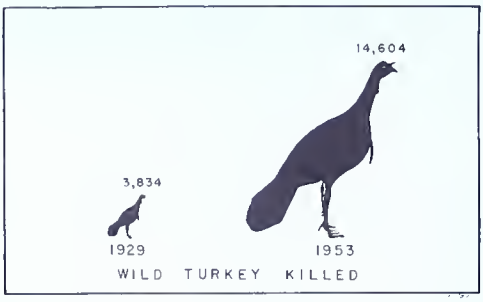
(1929 figures based on Field Officers' Estimates;
1953 figures based on Tabulation of Game-Kill Reports)

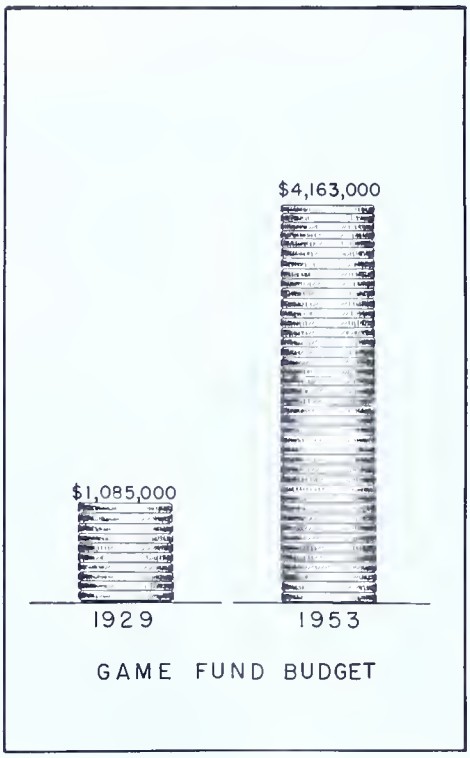
COUNTIES	Deer— Legal Antlered 1929	Deer— Legal Antlered 1953	Deer— Legal Antlerless 1929	Deer— Legal Antlerless 1953	Bears 1929	Bears 1953
Adams	218	167		39	..	..
Allegheny	15	31		21	..	..
Armstrong	154	194		100	..	..
Beaver	8	70		13	..	..
Bedford	38	571		158	1	..
Berks	45	288		100	..	..
Blair	73	431		88	4	..
Bradford	262	780		413	15	3
Bucks	6	146		46	..	..
Butler	84	230		85	..	..
Cambria	287	406		124	..	..
Cameron	1,300	926		531	28	11
Carbon	406	526		116	3	..
Centre	1,968	1,604		505	39	16
Chester	1	80		27	..	..
Clarion	264	464		225	..	3
Clearfield	2,106	1,505		923	12	13
Clinton	1,765	1,097		399	32	18
Columbia	53	356		134	9	..
Crawford	22	266		141	..	..
Cumberland	599	240		34	..	..
Dauphin	93	341		112	..	..
Delaware	....	9		....	..	..
Elk	1,300	1,953		820	15	19
Erie	....	214		102	..	..
Fayette	155	356		116	1	..
Forest	336	1,558		846	10	10
Franklin	591	505		142	..	..
Fulton	201	285		141	..	..
Greene	1	64		25	..	..
Huntingdon	834	899	C	336	3	2
Indiana	80	388	L	232	1	1
Jefferson	444	523	O	253	7	8
Juniata	230	464	S	122	..	..
Lackawanna	252	297	E	75	14	15
Lancaster	6	48	D	21	..	..
Lawrence	....	47		21	..	..
Lebanon	6	186		49	..	..
Lehigh	14	59		9	..	..
Luzerne	465	833		204	8	4
Lycoming	1,410	1,391		589	34	22
McKean	340	1,713		1,059	43	17
Mercer	7	112		62	..	..
Mifflin	628	423		161	2	2
Monroe	465	925		285	7	23
Montgomery	....	43		21	..	..
Montour	....	26		10	..	..
Northampton	45	79		19	..	..
Northumberland	14	172		61	..	..
Perry	250	576		194	..	..
Philadelphia	....	....		....	..	..
Pike	1,000	1,385		486	24	31
Potter	591	1,675		1,320	43	29
Schuylkill	79	634		211	..	..
Snyder	266	173		76	2	..
Somerset	312	987		455	1	..
Sullivan	206	1,188		500	30	7
Susquehanna	33	568		313	1	..
Tioga	350	1,138		585	12	20
Union	716	253		78	12	9
Venango	328	562		299	..	..
Warren	403	1,667		855	20	9
Washington	....	40		18	..	..
Wayne	115	1,030		502	8	7
Westmoreland	437	675		57	3	..
Wyoming	76	386		129	3	4
York	64	126		43	..	..
County Unknown	....	30		16	..	..
TOTAL	22,822	37,384†		16,252	447	303

† Includes 84 killed during the Special Archery Season.



A woman member of the Thos. Fisher Camp with a black bear killed in the Hammersley Fork Section of Potter County during the 1933 season.





PENNSYLVANIA'S SEASONS AND BAG LIMITS 1929

RUFFED GROUSE

Season Closed

WILD TURKEY

Nove. 1-Nov. 15. (Closed in Westmoreland, Fayette and Somerset counties) 1 per season.

RINGNECK PHEASANTS

(Males only)

No. 1-Nov. 15. 2 per day, 6 per season.

COTTONTAIL RABBITS

Nov. 1-Nov. 30. 5 per day, 30 per season.

SQUIRRELS

(Gray, Black and Fox combined)

Nov. 1-Nov. 30. 6 per day, 20 per season.

RED SQUIRRELS

Nov. 1-Aug. 15. Unlimited.

HARES

(Snowshoe Rabbits)

Nov. 1-Nov. 30. 3 per day, 15 per season.

RACCOONS

Nov. 1-Jan. 15, 1930. Unlimited.

WOODCHUCKS

Not legally recognized as game animal until 1937.

GRACKLES

(Blackbirds)

Aug. 1-Nov. 30. Unlimited.

UNTING RECORD
SEASONS
AND BAG LIMITS
1953

RUFFED GROUSE

Oct. 31-Nov. 28. 2 per day, 8 per season.

WILD TURKEYS

Oct. 31-Nov. 28. Closed in Adams, Allegheny, Beaver, Bucks, Chester, Cumberland, Delaware, Green, Lancaster, Montgomery, Perry, Philadelphia, Washington, York; that part of Franklin County south and east of U. S. Highway No. 11; and the parts of Berks, Dauphin, Lebanon, Lehigh and Northampton Counties south of U. S. Highway No. 22. 1 per season.

RINGNECK PHEASANTS

Oct. 31-Nov. 28. 2 per day, 8 per season. (Males only).

COTTONTAIL RABBITS

Oct. 31-Nov. 28. 4 per day, 30 per season.

SQUIRRELS

(Gray, Black & Fox combined)

Oct. 31-Nov. 28. 5 per day, 20 per season.

RED SQUIRRELS

All mos. except October. Unlimited.

HARES

(Snowshoe Rabbits)

Jan. 1-Jan. 9, 1954. 2 per day, 6 per season.

RACCOONS

Unprotected. Unlimited.

WOODCHUCKS

Unprotected. Unlimited.

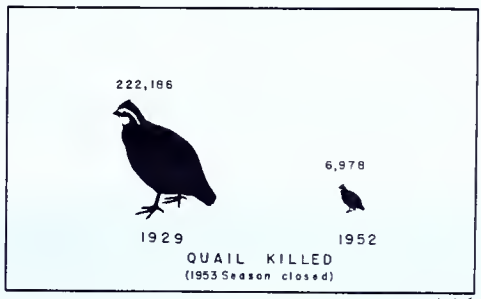
GRACKLES

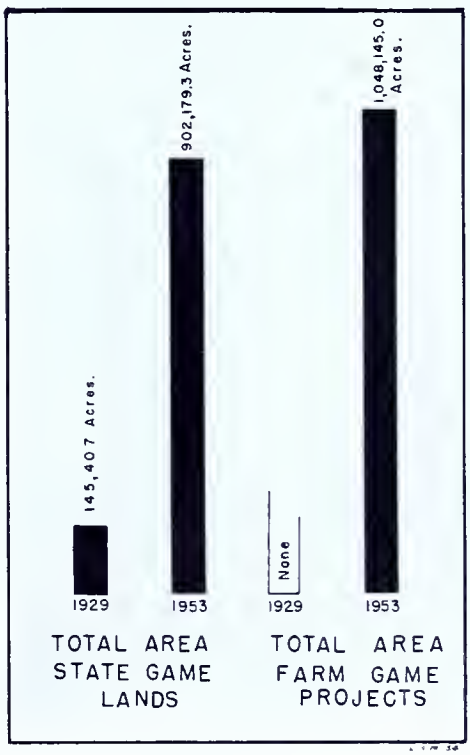
(Blackbirds)

Unprotected. Unlimited.



Mrs. Stanley Wensel, Barree, with a wild turkey she bagged the first day of the 1953 season on State Game Lands 166 in Blair County.





In the mid-thirties, this group of Philadelphia sportsmen flew to their favorite hunting grounds in Pennsylvania.

This big game hunting party found deer and bear hunting highly successful in the "old days".



BLACK BEARS

(Over one year old)

Nov. 1-Dec. 15. 1 per season (individual); 4 per season (hunting party).

DEER

Dec. 1-Dec. 15. 1 per season, 6 to camp, 2 or more points to antler (bucks). Antlerless closed.

ELK

Dec. 1-Dec. 15. 1 per season, individual or party, 4 or more points to one antler.

QUAIL

Nov. 1-Nov. 30. 8 per day, 25 per season.

HUNGARIAN PARTRIDGE

Season Closed.

SKUNKS & OPOSSUMS

Nov. 1-Feb. 28, 1930. Unlimited.

MINK

Nov. 1-Feb. 28, 1930. Unlimited.

MUSKRATS

Dec. 1-Feb. 28, 1930. Unlimited.

BEAVERS

Closed Season.

OTTERS

Nov. 1-Feb. 28. Unlimited.



Martin G. Musser, Maytown, proudly poses with a 190 pound black bear he bagged with a .22 Hornet rifle (centerfire cartridge) in the Loyalsock Valley. Musser had been calling turkeys when his trophy came to him on the first day of the 1953 season.



Photo Courtesy J. E. Benney, Altoona Mirror

Here is the most unusual deer ever bagged in Pennsylvania—a 49 point buck bagged by H. Kenneth Rutter, of East Freedom, a half hour before the 1953 season ended. The buck weighed 148 pounds, was bagged in Juniata County near Black Log.

Hurshel Nicewonger, of Oil City, trapped these beavers in the 1954 season on Sandy Creek, Venango County.



BLACK BEARS

Nov. 16-Nov. 21. 1 per season (individual), 2 per season (hunting party 3 or more).

DEER

Bow and Arrow: 1 per season, 2 or more points to antler or spike 3" or longer (Bucks) Oct. 12-Oct. 24.

Regular Season: 1 per season, 2 or more points to antler or spike 3" or longer (Bucks) Nov. 30-Dec. 12.

Antlerless Season: 1 per season. Dec. 14-15. (Only 1 deer during the three combined seasons).

ELK

Season Closed.

QUAIL

Season Closed.

HUNGARIAN PARTRIDGE

Season Closed.

SKUNKS & OPOSSUMS

Unprotected. Unlimited.

MINK

Nov. 9-Jan. 1, 1954. Unlimited.

MUSKRATS

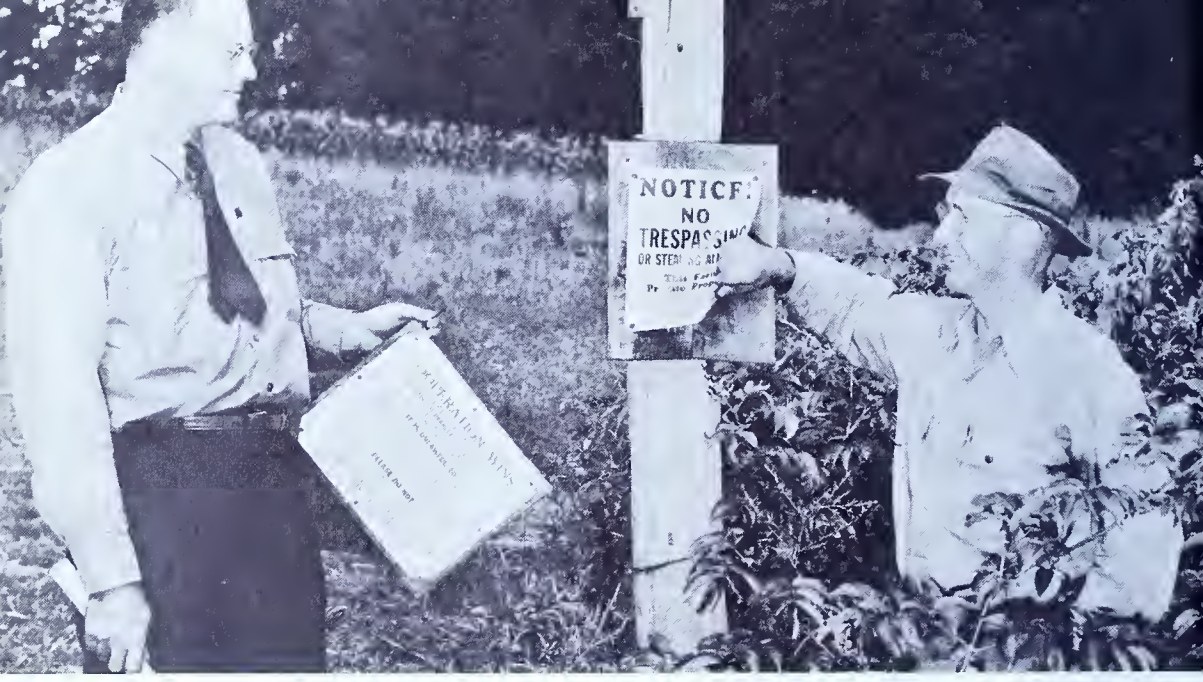
Nov. 28-Jan. 16, 1954. Unlimited.

BEAVERS

Feb. 15-Mar. 6, 1954. 4 per day, 4 per season.

OTTERS

Closed Season.



Hal Harrison Photo

The Commission's Cooperative Farm-Game Program started in 1936, has provided mutual benefits to both farmers and hunters. It has proved itself to be one of the best solutions to "No Trespass" signs ever devised.

Legal Small Game Kill

1929 - THEN 1953 - NOW

(Based on Field Officer's Estimates)

SPECIES	*SEASON OF 1929 NUMBER*	*SEASON OF 1953 NUMBER*
Rabbits	3,524,652	1,398,132
Hares (Snowshoes)	No Record	4,237
Hungarian Partridges	Closed	Closed
Squirrels	455,264	771,772
Raccoons	28,838	129,258
Wild Turkeys	3,834	14,604
Ruffed Grouse	Closed	62,028
Ringneck Pheasants	212,082	452,915
Quail	222,186	Closed
Woodcocks & Shorebirds	72,666	14,262
Grackles (Blackbirds)	59,821	No Record
Wild Waterfowl	45,008	53,595
Woodchucks	No Record	332,167
Doves	No Record	12,693
Total Number	4,624,351	3,299,602



Vol. I April, 1929

The Story Behind the Pennsylvania Game News

Vol. XXV April, 1954

The Story Behind Game News

THIS Silver Anniversary issue of the PENNSYLVANIA GAME NEWS is the result of joint effort, close timing, and combined skill. Like all issues of this, or any other, conservation magazine, its success can only be judged by the reactions of its readership.

If, by reading this issue and all those that preceded it, the people of Pennsylvania are more conservation minded today than they were twenty-five years ago—if the sportsmanship and basic appreciation for wild birds and animals by Keystone State hunters has gradually changed for the better throughout all these years—and, finally, if there is a fuller public awareness of wildlife conservation today than there was a quarter century ago, then the mission of this particular magazine has been in large part fulfilled.

Production of your GAME NEWS involves many skills, a great deal of advance planning, and a constant challenge to men and machines. It requires the earnest efforts of a great many people, from not only the editorial staff who selects what you read and see here, but also from a wide variety of technical specialists in the printing and engraving professions. The picture-story you are about to see takes you behind the scenes and, in capsule form, attempts to tell how this magazine "went to press."

Months before the publication date, the editorial staff plans what feature articles will appear, assigns illustrations to artists and photographers, and carefully prepares copy for the printer. Here, Editor Will Johns discusses a manuscript with Leo A. Luttringer, Jr., left, Chief of the Commission's Conservation Education Division. His secretary, Miss Mary E. Koppenhaver, right, takes notes on proposed changes in the article.





Mr. Edward Bubb, General Superintendent of the Telegraph Press, Harrisburg, carefully checks color press proofs against progressives of GAME NEWS *covers as printers ready the high-speed, two-color presses for the final run. Cover engravings are made by skilled technicians at the Erie Engraving Company. It takes at least six weeks to make the four color plates ready for the presses. Covers for two issues are printed at the same time in advance.*

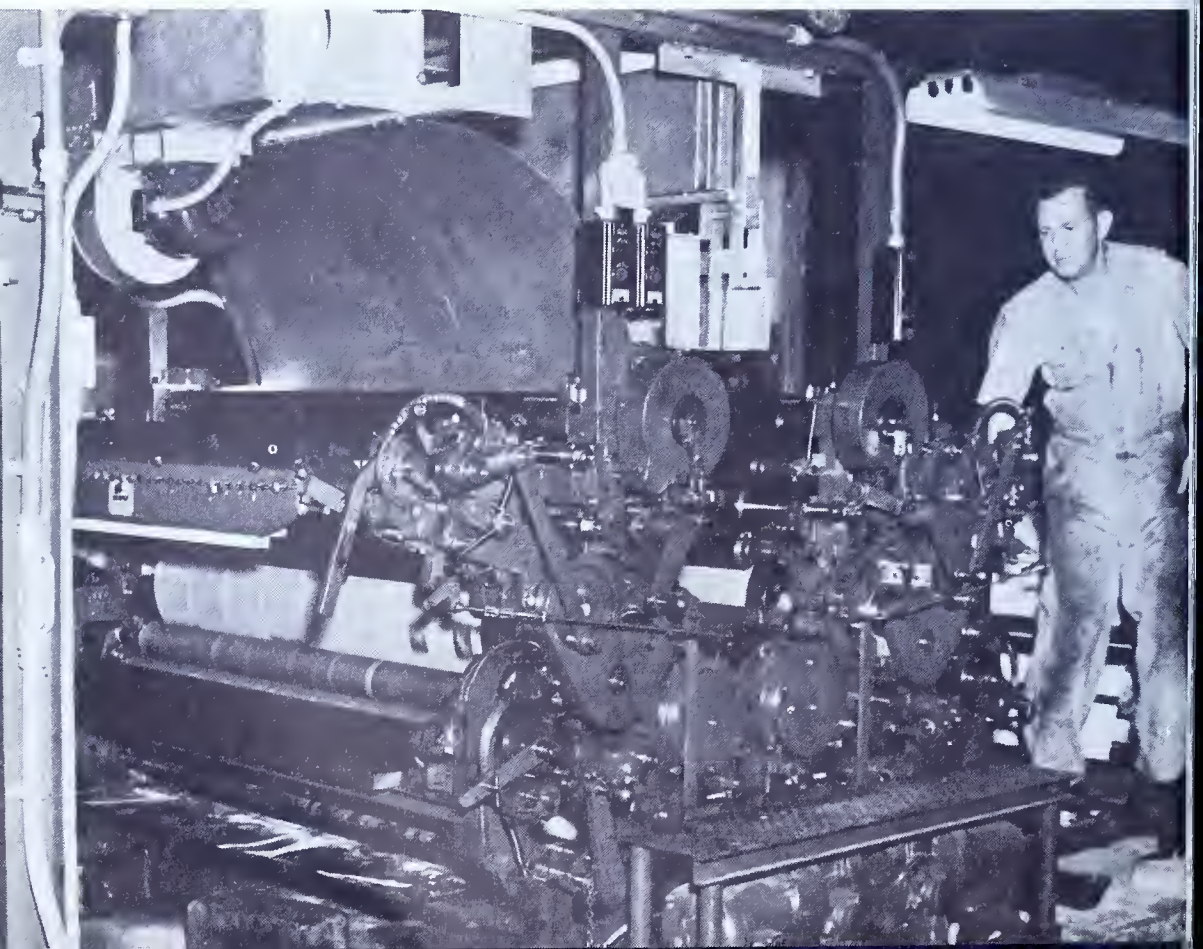
Here Mr. Roy Patrick, left, Color Department Foreman, watches the first cover sheets rolling off press. Pressmen McCurdy, Scout, Shartle, and Waltz stand ready to make any necessary adjustments in the sensitive machinery. Four days of continuous operation, 16 hours per day, are required to print the covers.





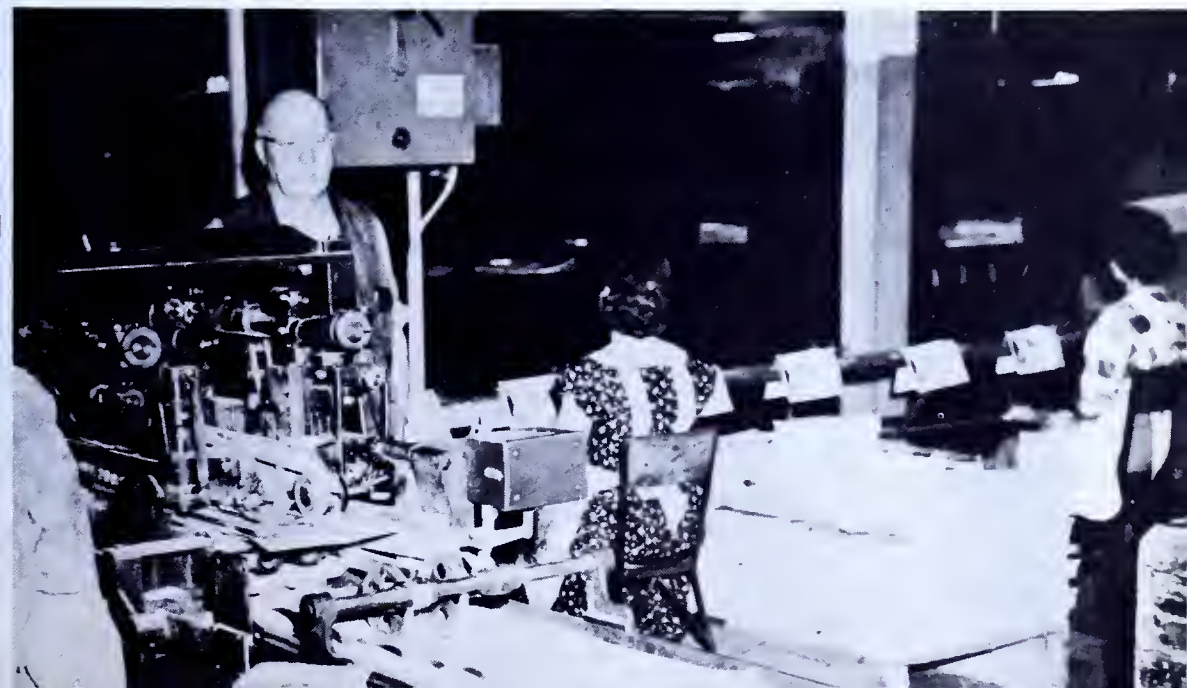
Composing room foremen Bill Parker, right, and Harold Martin watch as Linotype Operator Shambaugh sets type for GAME NEWS. *About a 1/3 of a ton of special alloy lead is used in each issue of the magazine. Following the making of a final press proof, later to be photographed for an offset type printing plate, the type is melted and used over again. Type setting and page composition consume 3 days of round the clock work.*

The intricate machine shown in operation here is known as a Webb high-speed rotary offset press. It can produce as many as 12,000 copies of GAME NEWS *per hour, including folding and collating. Ed Evans, shown checking the press, is Offset Department Foreman and closely supervises the making of the printing plates as well as press operation. It requires over 10 tons or 41 miles of special quality paper to print one issue of* GAME NEWS.



Meanwhile, personnel of the magazine's circulation section have been busy preparing the Addressograph plates and paper tape used in mailing GAME NEWS. *More than three weeks are required to handle the thousands of requests for new subscriptions, changes of address, cutting and filing of plates, and all other changes before the mailing tape containing more than 66,000 names can be sent to the shipping department at the Telegraph Press. Shown here, left to right, are magazine circulation personnel Oliver Hoover, Mrs. Zelda Ross, Mrs. Dorothy Bubb, and Mrs. Francis Hoover.*

About the 25th of each month, GAME NEWS *covers and text are coming "down the line" in the Telegraph's Bindery Department. Here skilled workers under the supervision of Department Foreman Francis Griffee, shown at the left, assemble, trim and staple together the several folios and cover sheets.*



As the magazines reach the final phase of production, these employees of the Shipping Department, under the direction of Foreman Lou Britton, clip the individual mailing labels from the roll of paper tape and affix them to the back covers. This phase of magazine production consumes about 4 days.

Finally, the trucks, heavily loaded with mail sacks of GAME NEWS, *leave the printing plant on their way to the Harrisburg Post Office. With the same split-timing and precision which characterizes every prior phase of magazine production, postal employees in Harrisburg as well as thousands of other post offices have worked hard to get your copy of* GAME NEWS *to your local mail carrier and to you in the shortest possible time.*



THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
WILBUR M. CRAMER ..... *Asst. to Exec. Dir.*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS

(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk. Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.


25th
NED SMITH

PENN... STATE LIBRARY
...ON

PENNSYLVANIA

Game News

QP38.34
1.6

MAY 1954 10 CENTS





THE STORY BEHIND THE COVER

CLANDESTINE is a good word for woodcock. One of the least known of game birds, the "timberdoodle" has a passion for privacy that prevents most people from observing his home life. Yet this small, grotesque, migratory shorebird has a devoted following among sportsmen and gourmets. Whether they call him mud snipe, marsh plover, bog sucker or hill partridge, the American woodcock is loved and admired for his swift, deceptive flight, his habit of sitting tight when pinned down by gun dogs, and his flavor when perfectly broiled and served on crisp, brown toast.

In May the birth of another woodcock generation becomes one of nature's most closely guarded secrets. And this month's cover serves to prove the point. A mother woodcock, intent on incubating her clutch of two to four eggs, is a portrait in camouflage. She blends so well into the natural background of the outdoor floor, it takes plenty of perseverance and perceptiveness to see either the egg or the woodcock. But contrary to common belief, a good English setter, Brittany spaniel, or other canine specialist can locate nesting birds by scent. Because they are widely separated and do not move much while incubating, the female woodcocks do not afford as many "points" as in the fall; the scent is there, however, even though it is more stationary. And that's one more good reason for keeping hunting dogs out of the woods and fields during spring and early summer.

Actually, here is one bird which doesn't believe in modern day concepts of housing. A woodcock nest is little more than a natural depression in the ground, lined with leaves, twigs, or grasses found in the immediate vicinity. And as soon as the woodcock babies hatch and dry, the entire family packs up and leaves home, never to return.

Young timberdoodles are hardly bigger than a minute when first hatched but they grow fast. By the time the little birds are 15 days old, they are well feathered except in the head and tail regions. At three weeks of age they closely resemble adult birds and can fly almost as swiftly and strongly. Like the mother, fledgling woodcocks rely almost entirely on their ability to "freeze" and their excellent camouflage coloration to protect them in time of danger. That these two characteristics are sufficient is best indicated by the fact that, unlike most other ground-nesting birds, a high percentage of woodcocks make it to maturity.

Next fall the woodcock "Class of '54" will be ready for graduation. If they pass the final exams of shot and shell, successfully traverse the moonlit aerial routes and survive their winter vacation in the South, these little brown ghosts of the alder thickets and swales will be back next May to repeat one of nature's most interesting reproductive cycles.

PENNSYLVANIA
Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 5
May, 1954

CONTENTS

I Saw Them Fly 4
By Archibald Rutledge
The Place of Stream Pollution Control In Watershed Management 10
By J. H. Bender
A Duckling Is Born 16
By Ormal Sprungman
Spring Symphony 17
By John H. Day
Field Notes 22
Federal Aid In Wildlife Restoration — Northwestern Pennsylvania 27
Road To Conservation—Proper Land Use 37
By Ivan McKeever

★

Cover Ektachrome
By
Ralph M. Cady

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Editorial . . .

Water, Soil and You

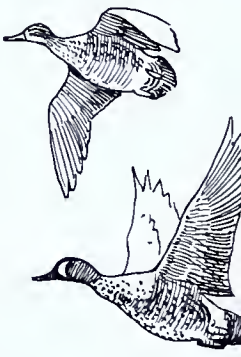
A RIVER in flood means different things to different people. To the property owner along the stream, it means possible loss of buildings, livestock and crops. The highway engineer sees potential destruction to roads and bridges. The angler sees loss of fish food and fish habitat; the hunter envisions loss of nesting cover for waterfowl, actual death by drowning for much wildlife.

In recent years, a growing number of people have observed the color of the flood water. More and more, it is being realized that the muddy color can be attributed to the heavy silt load—the all-important top soil from our farms—a loss that seriously affects our national well-being.

Today, some of us see the volume as well as the color. We realize that water itself is not an unlimited resource—that water which floods downstream to the ocean will not be available, later, for crops, industry, human consumption, and recreation. The simple truth is that in a growing number of areas—in New York City, in Philadelphia and the Delaware Valley—the inadequacy of the water supply has become one of our most serious problems.



In looking at the flood, each of us sees it from his own special field of interest, usually from the field most closely related to our own pocketbook. Our tendency to think in terms of "single-use" rather than in terms of "overall-use" is a normal one—the thinking is much simpler. Years ago, when there were few people, and seemingly endless resources, single-use worked out satisfactorily. There were plenty of resources for everyone. But the constant and immense increases in human population alter the picture. Eventually, we must think in terms of over-all use—of the greatest good for the greatest number.



Frequently, the wise over-all use of our important water resources will be multiple-use. And in determining what is wise, we must be sure that human values receive proper recognition; we must make it clear that there are basic human needs which outweigh the material labor-saving "wants." There may be a need for those uses which make life easy, but there is a definite and more important need for those uses which make life worthwhile.

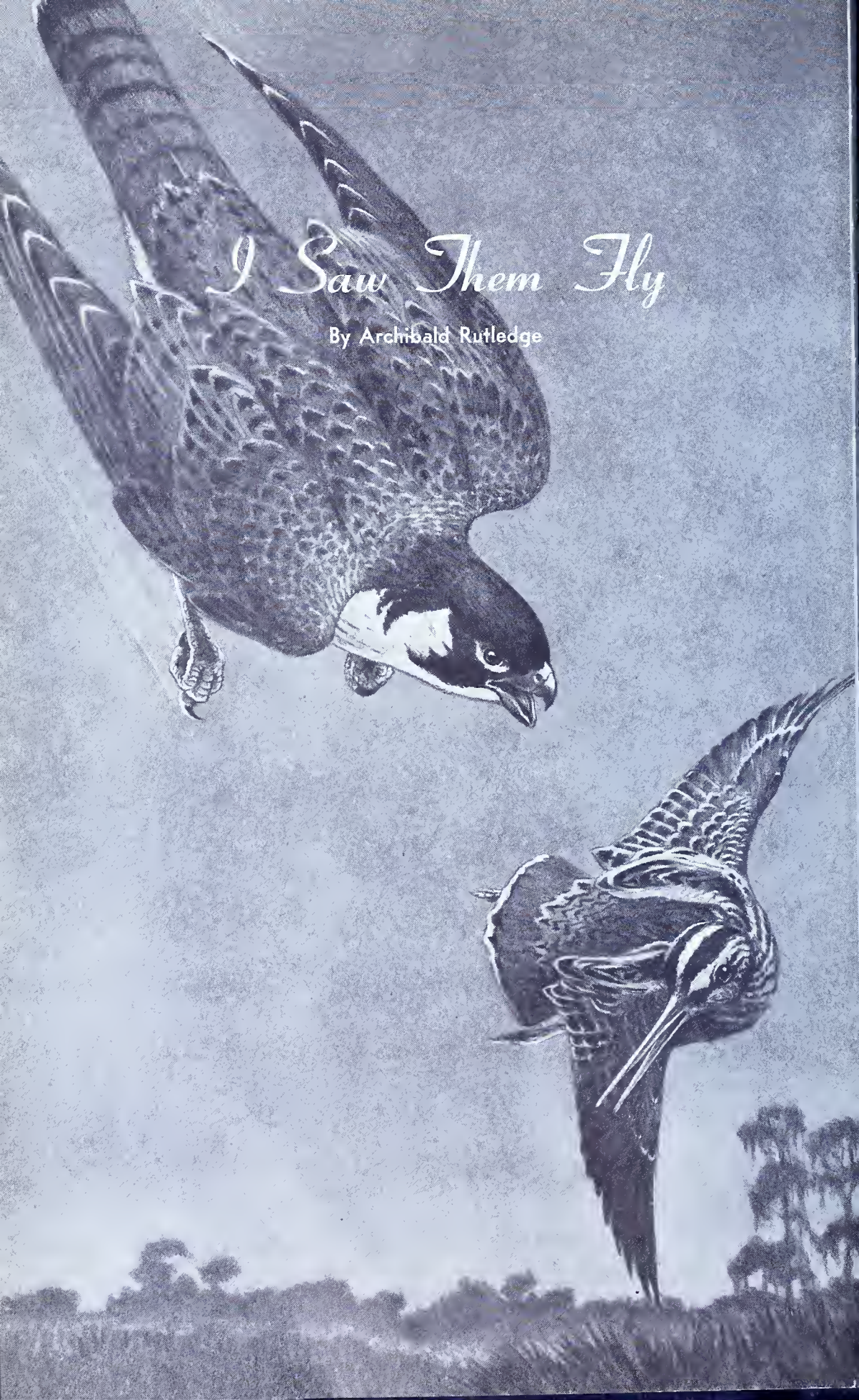
We must realize that the shift from mere use of our water and other resources to wise use of those resources will not be an easy shift to make. It will not come about by table pounding or by simply cussing the conservation "sinners." In one way or another, we're all conservation "sinners." By working collectively, and constructively, we can improve our common lot.

. . . from a talk given at the 46th Annual Convention, League of Ohio Sportsmen, by R. W. Eschmeyer, Executive Vice-President of the Sport Fishing Institute.



I Saw Them Fly

By Archibald Rutledge



ON THE first day of November of a year recently passed I was out in the wilds of the Tuscarora Mountains in Southern Pennsylvania, and few regions are wilder. It was one of those muscadine autumn mornings when the frosted wild grapes are shedding their winey fragrance, when the bramble-dew is spicy, when the flaring leaves, hanging ready to fall, now detached by the first mist breath of daybreak, dance slowly downward, giving off delicate aromas even as they fall. Then the hemlocks and the white pines are sweetly pungent, and the stalwart hickories, glad in their pioneer unassailable strength, exhale an aromatic poignance.

Above the artistic spire of a swarthy hemlock the last star faded; I heard an awakened chickadee call. Over the far-drifted gold of the tawny wet leaves a gray squirrel hopped daintily, and then scampered away.

I was on a ridge partly bare, so that my view of the distant awakening valley and of the brightening mountain-crest above me was unobstructed. Suddenly over the bare tree-tops a ruffed grouse sped by in his deft, amazing, and perfect yet wildly hurtling flight. Surely there is no bird which has a swifter and a more controlled flight. He is the jet plane of the forest fastnesses.

But on that morning my admiration of him had to yield to my astonishment over a far greater spectacle. A flock of sixteen turkeys had been roosting on the far side of the mountain, from the top of which I was more than half a mile distant. Though I heard no gun, these great birds must have been violently startled, for high in the morning heavens they suddenly appeared in the pale azure above the looming blackness of the ridge, sixteen dark and splendid voyageurs of the dawn. These wild argonauts cleared the pine-fringed crest of the ridge by at least three hundred feet; at the pitch of their flight they were therefore more than a thousand feet above the sleeping valley. What, I wondered, would they do now? How would they come to earth from that dizzy altitude? For it ought to be remembered that turkeys are not often on the wing, and perhaps never on the wing save on a flight that has some practical purpose. When, therefore, they are in the air, especially at a considerable altitude, they seldom fail to startle the beholder both by their bulk and by their steady if ponderous grace.

These birds that I was watching, having reached the zenith of their great aerial climb, seemed one moment to tower, the next to separate; then setting their great wings in downward arcs, they volplaned roaring over the trees on the wild mountain slope. He who has not actually observed this performance of America's noblest and largest game bird might be skeptical about the possibility of it. But here was the thing being done before my very eyes. At a terrific pace they came, gliding down the unobstructed speedway of the sky; fleeting past the branched mystery of the bare tree-tops. Then, at the pitch of their momentum, having obtained the desired distance between them and their far-off enemy, with a dexterity of grace fully equal to the dizzy celerity of their flight, they banked, turned, and, now calling together in their plaintive, alluring way, they dropped one by one to the friendly forest floor.

There was real triumph in a flight like this, but I have been almost as much impressed by the ominous lordly retreat of vultures before a storm. The boundless heavens are their watch tower, and they know before we do when a storm is coming. Many times have I been made aware of an approaching tempest through watching the disdainful, powerful flight of these sinister shadows. There is a certain wild beauty in their swarthy, insolent strength, and I have

yet to see a storm overtake these imperious and conquering fugitives.

There is a triumphant flight of birds; there is a fugitive flight, an ecstatic sleeping on the wing in the blue abysses, a pyrotechnic sustaining before flowers. But too little do we mark what I should call the pathetic flight of birds. I have a pear tree on my lawn, and one spring a mourning dove made her nest on a horizontal limb thirty feet from the ground. Though I drove under the tree several times each day, and though I often walked under it and cut the grass beneath it, I never noticed the nest until by chance, waiting with my foot on the running-board for the coming of my wife who was giving her hat that final touch, I happened to glance upward. The two little doves, then fully feathered, were elegantly perched on limbs beside the nest. The mother was with them.

The second she saw that I saw them, she dropped incontinently to the ground at my feet—a sorely wounded creature; skimmed over the lawn in pathetic, crazy fashion, and finally fluttered exhausted to the ground under a little dogwood tree, where she lay on her side panting. Ah, mother love! Feigning mortal hurt in order to attract the enemy away from her young!



This flight, characterized by pretended injury, is perhaps more deeply affecting than the eagle's mastery of the air, splendidly beating his way homeward in the face of a full-blowing sou'wester. He appeals to us as does the lonely power of a great poem. But the sight of a mother trying to attract danger to herself and away from her babies goes deeper with us. We admire the king of the air, but we love the mother. By mere splendor our sympathies are not awakened. But a show of genuine affection stirs us; and by it we are led to feel the kinship of all hearts.

The eagle is superb in flight; but, though not so impressive, many of the hawks are so beautiful on the wing as is our national bird. Of the hawk family, remarkable for the grace and speed of their flight, the broad-winged hawk soars highest; indeed, I have watched him when he so towered as to be almost lost to sight, in the blue tracts above the thunder. I have often wondered why this particular bird chooses to wheel so high above the earth, far beyond any prey that he can possibly hope to catch, or even discern. The one reasonable explanation is that a living creature, merely because it does not happen to be man, is not therefore precluded from natural joy.

Although no man can speak with certainty of the exact relative speeds of members of the same species or of different species, the swiftness of whose flight can not with preciseness be gauged, yet to all appearances the duck hawk, which is the illustrious peregrine falcon of falconry, is the fiercest, the most daring, and the speediest of all birds of prey. Its swiftness needs no further emphasis

of confirmation than the fact that this lordly pirate of the air captures the ruffed grouse on the wing—a surpassing feat. Walt Whitman would apparently award the palm to the man-o'-war bird, of which he declares,

"At dusk thou lookest on Senegal;
At morn, America."

One day in the lonely marshes of Tranquility, in the Santee Delta, I was witness to a spectacular contest in speed between a Wilson snipe and a duck hawk. For the game bird this race was, of course, a matter of life and death; and whenever this is the case, any living thing so jeoparded appears to draw on deep reservoirs of energy which ordinarily lie untapped.

I was standing on an old bank with a wild sea of marsh rolling westward in golden waves. It was mid-October, and I was out in the wasteland country to watch the newly arrived autumn migrants; many shore birds there were, and wild-ducks, night-herons, a few woodcock, and many Wilson snipe. It just happened that I had my eye on this last bird, nervously darting toward a tuft of watery sedge, crouching, and then stealing with artful furtiveness to another tuft when, out of the wide-winged sunset, like some beautiful avenging phantom, a peregrine falcon suddenly appeared. The snipe must have perceived that he was the intended victim, and he must have judged that his best, perhaps his only, chance of escape was in flight. With startled, sharp cries he sprang from the morass, and was away on his dashing, dodging, enigmatic flight. The breathless pursuit of this fine game bird by the duck-hawk I had an excellent chance to watch, for the sky above the marshes was radiant with an effulgent afterglow.

I took it for granted that the superb peregrine falcon would overtake the frantically darting fugitive, which had not at best a start of more than a hundred feet, and that distance the hawk could cover in a single second. But what the falcon had in celerity the snipe matched in craft. To begin with, the game bird, much to my surprise, instead of dashing off low over the marshes, suddenly towered, as if safety lay in the zenith. The hawk, a veritable corsair of the sky, of course, followed, with a velocity so great that my eye, on account of his swerving at high speed, frequently lost him. That he gained on the English snipe is certain, for again and again he struck at his prey; but in the fraction of a second that it took him to deliver his stroke, his quarry had left the appointed place. Moreover the pursuer lost distance every time he rose above his prey and lunged for it.

Clearly in the pearly twilight sky I could watch this dramatic race, and I saw the end of it. The proud peregrine falcon, after having attempted desperately to achieve his design, suddenly broke off in disgust, disdainfully, like an aristocrat who withdraws from a contest in which he discovers a menial winning. The snipe escaped in the kindly vastness of the glimmering sky, and the duck hawk beat his way off toward a lodging for the night in the looming pines at the terminal of the huge delta.

Not so much for swiftness, but for tireless energy on the wing, the chimney swift is extraordinary. As with most swallows, having no purpose to walk, this bird has negligible legs and hardly any feet. But his wings compensate. For the size of his body, his wings are prodigious in length, and of an exquisite grace and contour.

Unlike most birds, this independent elf, for at least two months after the spring migration, gives no thought whatever to the matter of nesting. He spends all these weeks ecstatically on the wing, now flying low in heavy weather, and now high on bright days. At last, when he con-

descends to build, he snaps in flight dead twigs for his nestlings' cradle.

While the chimney swift is perhaps the most marvelous tireless performer on the wing of all the bird-myriads, in sheer acrobatics he is surpassed by that obscure mountebank, the yellow-breasted chat. It is the male only who thus performs, and he does so only in the breeding season, at which time alone is his strange song heard —a sudden wild babble of ecstatic, bubbling notes, incoherent yet musical, a love-tumultuous outburst, within the comprehension of any one who has gone through that sweet melee of the emotions known as love.

One day I was sitting on the top rail of an old pasture fence when, only twenty feet or so away, a chat suddenly burst in his incontinent way out of a dense patch of blackberry canes. He was gurgling his melodious song as he rose. Straight up he went for fifteen feet, then poised; then throwing his wings back, he dropped crazily toward the earth in a series of astonishing maneuvers—now a regular collapse of two feet, now a slipping glide of a yard, now a controlled tumble of only a foot. A clown, a master-acrobat, a love-lyrist —all in one and all performing at the same time in one bird! And, unlike human beings but like the more modest children of field and woods, the chat never exhibits himself for the benefit of others.

Sometimes, when you are rushing along on a train speeding perhaps sixty miles an hour, there will come a slight slowing of the cyclone pace, then a faint, continuous jar accompanied by a rushing liquid sound. It is the locomotive drinking on the fly. This monstrous steel swallow, skimming along, quenches its thirst on the wing.

There are a good many birds—most of them of the swallow family—which habitually drink on the wing; and while I can not be positive just how this habit arose, it is likely that swallows, gathering insects on the wing, find it natural to take water the same way.

Of all birds, none is more consistently and gracefully spectacular than the beautiful swallow-tailed kite; and the size of this bird, the elegance of his plumage, and the startling shape of his tail contribute to make him fascinating to watch on the wing.

Near a great fresh-water reservoir which adjoins my plantation, I used to delight in watching several pairs of these beautiful birds. Their notes, which are plaintive and sweet, can be heard at a great distance; and their coming was usually heralded by their far, poignant cries. Now speeding over the delicate greenery of a feathery cypress, these superb artists of flight would buoyantly come. Let us watch one in his marvelous performance.

From the blue above the cypress he suddenly drops to the gleaming waters of the lagoon, skims its surface at deft high speed, dips his lower bill for drinking, and, his thirst quenched, suddenly mounts the sky, turns swiftly, darts past a yellow pine on which a lizard with basilisk eyes is sunning himself, seizes the little reptile, swallows him—and all the while maintains the nonchalant giddy cunning of his flight. Rejoins his companions, the kite now goes through a few joyous aerial maneuvers, actually turning over and over in the air, looping the loop with incredible dexterity. And all his comrades join him in friendly rivalry in their circus game! I see my friend swoop to catch something from a spray of wild trumpet creeper; then he speeds on, and is lost to sight in the greenery of the swamp, though long after he is gone I hear his melancholy, sweet cry.

Hamlet puts first in his category of swift things meditation and the thoughts of love. I have mentioned the duck hawk as the holder of most

of the speed records. But as an artist of delicate performance, the hummingbird is really superior even to the falcon. Apparently this winged fairy is the only bird which can rise perpendicularly with great speed and certainty. It is a miniature helicopter. Also it is the only bird which is equipped with a reverse gear. It can and does fly backward, and with that faerie grace and precision of continent abandon that is the hallmark of high art. Another especial performer well worth our notice is the nighthawk, which, after a swift, erratic series of advances, turns, and rises, suddenly "lets go everything" and comes wildly toward the earth, the wind roaring through the curve of his wings. Within a few feet of the ground he extends his wings, straightens out, and with a few powerful strokes is beating upward again, all the while uttering his strange and haunting cry. This high-diving of the night-hawk is one of the most unexpected features in the flight of birds, and occurring in the dusk, or under the stars, it has added to it the solitary mystery investing all things that are of the night.

Beautiful wings! Though we have you not, yet we have you forever; for in imagination we course the far sky and the dim forest and the sun-dappled thickets with you. Best of all, by the manifestation of your power we come to a surer knowledge of the Maker of us all. It is this dawning, joyous certainty that gives our spirits eternal wings.

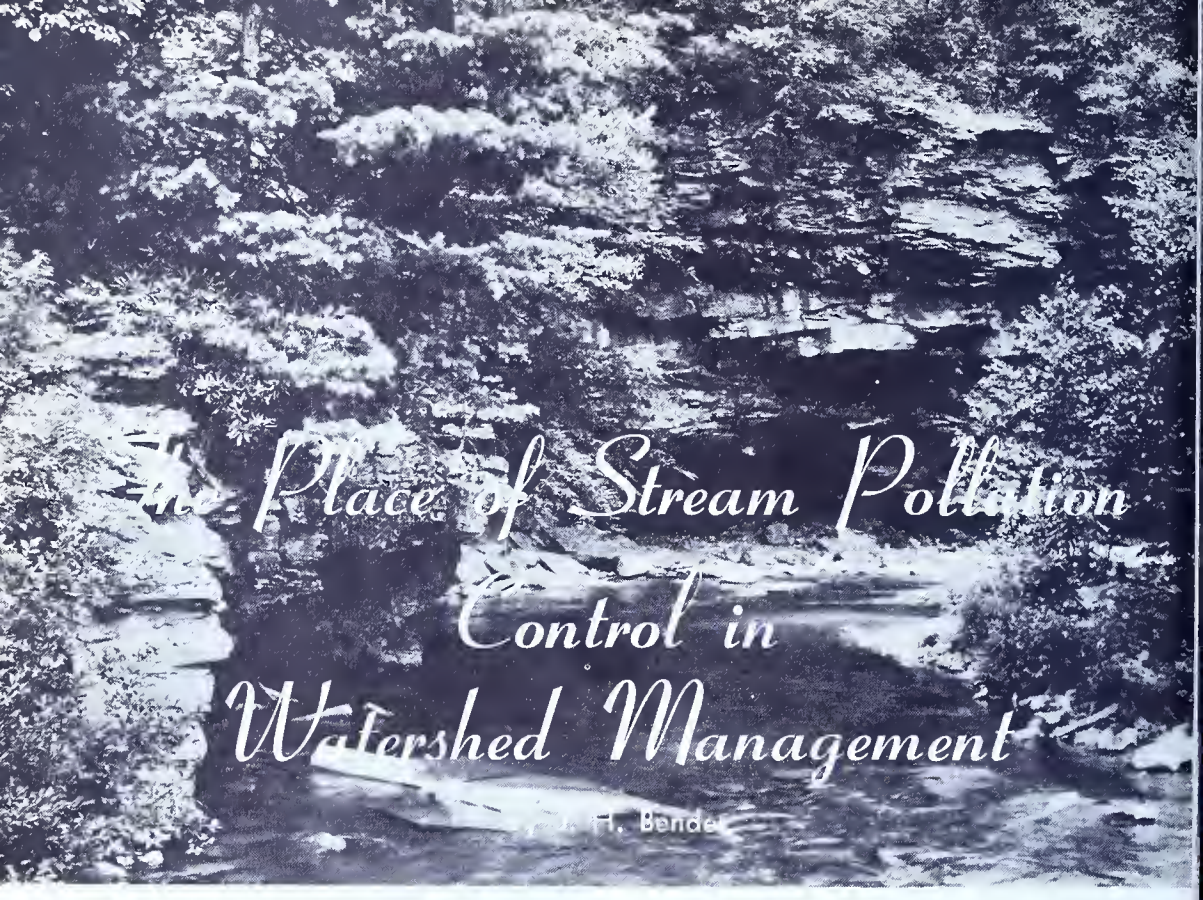


. . . *The End*

Top Dog

In late January, the friendly, flop-eared little hound with the ever-wagging tail—the beagle—finally won acclaim as the Number One U. S. purebred dog. With a population of 45,398 beagles registered in 1953 by the American Kennel Club, the beagle at last has nosed out the cocker spaniel (population 43,561) for top honors. Cocker spaniels have been the national favorite for 17 years. The other ranking breeds, in order: boxers, dachshunds, collies, Chihuahuas, German shepherds, Boston terriers, Pekingese, and standard poodles.

. . . from *Time,* February 1, 1954.



In Place of Stream Pollution Control in Watershed Management

By W. H. Bender

SINCE so many of the other aspects of watershed management, including irrigation, recreation, public parks and many of the industrial benefits, hinge directly on the availability of clean water, Stream Pollution Control must take first place in most programs of Watershed Management. It would be impractical to think of the great watershed developments of this nation, such as the Tennessee valley development, the Colorado development, the Columbia and all the others which might be mentioned, without prime emphasis on pollution control. However, each watershed presents a problem of varied usefulness and the degree of water purity must be largely determined by the main purposes to be served. In the Schuylkill River development in Pennsylvania, the clean up of the so called 'dirtiest river on earth,' the chief goal was to provide ample supplies of domestic and industrial water for the six million concentration of population in the Philadelphia district, while in many of our western developments such as the great drainage basins of California and the Southwest irrigation and power represent the principal benefits. In each case, clean water in sufficient volume to provide the service required, is of paramount importance, but the degree of purity needed will vary to some extent.

This article is based on an address by Mr. Bender before the 19th North American Wildlife Conference held in Chicago last March. Mr. Bender is Chairman, Pure Streams Committee of the Pennsylvania Federation of Sportsmen's Clubs, and resides in Williamsport. A complete transcript of his address plus other important papers delivered at Chicago will be available in the official Transactions of the Conference to be published by the Wildlife Management Institute, 709 Wire Building, Washington 5, D. C. late this summer.

In all cases the Public Health is of first importance and it cannot be maintained with a back-yard of filthy polluted water in our rivers and streams. Enforceable laws on drinking water have brought under control in the United States such epidemics as typhoid and others, but lack of adequate pollution control on many of our great drainage basins is strongly suspected of being responsible for other infectious diseases which are not completely under control, including polio. It is a fact, in portions of the world where very little pollution control is practiced, such as the Yellow river basin of China and the Ganges of India, the raging of uncontrolled epidemics many of which are water-born take a tremendous toll of lives annually.

Much has been done here in the United States in the way of Pollution Control, yet, actually, we have only started on the job still to be done. We not only have a large portion of the accumulated pollution of the past three hundred years to clean up, but we have problems of increasing perplexity coming up every day. With great developments in the chemical field, new and more powerful components and an ever expanding industry, the problems of pollution control are growing by leaps and bounds. Now, with the release of atomic energy for industrial exploitation, the prospects of even more frightening problems for the sanitary engineer are in the making to meet the new problems of pollution control which this entirely new industry may bring. And, these problems must be met, together with those we failed to adequately meet back in the eighteen hundreds and the early years of this century, during the years of the first world war when we were too busy to take care of our obligations of pollution control. And, the things we failed to do in the depression years of the thirties when we were supposed to be too poor to control pollution, and during the hectic years of the second world war, when again we had to concentrate on the National Defense and won, but at such a terrific price in the way of added pollution in nearly all of our great drainage basins, bays and coastal waters all over North America. The timetable of pollution control on many of our great watersheds is very rapidly running out. In fact many of our rivers have long since reached and passed the saturation point. They are no longer living assets for the benefit of our people, but deadly streams of virulent disease which threaten our very well-being as a prosperous and healthful nation.

The benefits of pollution control in watershed management are obvious. First of all, our national health depends so much upon it. It is just as important today to abolish our watershed cess pools, namely our badly polluted rivers, as it was fifty or seventy-five years ago to abolish the individual backyard cess pools in most of our cities at that time. Second in importance to maintaining public health, is to provide a sufficient supply of clean water for domestic and industrial use, without which our nation cannot continue to grow and prosper. We are so rapidly running out of water that we cannot possibly go another twenty-five years without keeping what clean water we have left and reclaiming a large portion of that which has been lost thru pollution.

Therefore, whether we like it or not, the time is here and whether we can afford it or not, we have no choice except to concentrate on the elimination of pollution.

Now—how to tackle a job of this magnitude?

1—By expanding the idea of watershed or basin control, to include a representative board or committee on every minor tributary, with a voice at the grass-roots in over-all planning.

2—By strengthening the agencies charged with the control of pollution. Unfortunately, we find today many agencies trying to function very badly under-manned and with a scale of wages paid that cannot possibly attract young and vigorous engineers needed for the job to be done.

3—By closely co-ordinating the efforts of all governmental agencies presently responsible for pollution control. This includes municipal, state and federal government. Let these agencies share the costs on an equitable basis.

4—By selling industry on the benefits and the profits, if you please, to be derived from pollution control. Many industries have already discovered thru research that much of the refuse formerly sewered into our streams held valuable by-products of great marketable value. This applies in particular to many branches of the chemical industry, to synthetics, the oil industry, meat packing and just plain ordinary sewage which by conversion into fertilizer at present carries approximately forty percent of the operating costs of the sewage disposal plant for the city of Milwaukee. Let American ingenuity among our young engineers and scientists go to work more fully on this problem of profits from refuse and the results can be astounding.

5—To do this job, all of us must get wholeheartedly behind a nationwide drive for pollution control. It is a fact that when enough people want pollution control in a given watershed or stream, the program moves very rapidly in every direction. Therefore, it is still largely a job of education to create the public demand for pollution control.

Now, to elaborate briefly on these five suggested measures. By taking into positions of responsibility, persons at the local level, some of the grass-root support needed for pollution control can be engendered. No one is really interested in any type of project unless he is close enough to participate in it and to understand its purposes. Also, it has been demon-

Hal Harrison Photo

Paul Swanson, Venango County sportsman, holds a brown trout and a black bass in one hand and a walleye pike in the other—just a few of the thousands of fish destroyed by pollution in Big Sandy Creek several years ago.





Hal Harrison Photo

On its way to kill the fish in some nearby stream is this sulphuric acid water from an abandoned strip mine somewhere in Pennsylvania.

strated that more favorable acceptance of any movement is always obtained by local participation. An outstanding example of this is found in most school boards, which are sustained by local, state and federal funds, but function with a minimum of friction thru the election or appointment of local members.

On the second point, strengthening pollution control agencies. If we recognize the magnitude of the task to be done, we will easily see the total inadequacy of the means most state legislatures provide in the way of funds. We must get across to our lawmakers the dire necessity for pollution control. With water scarcities becoming more acute from year to year in various sections of our nation, it is high time responsible people take heed and provide the necessary funds for enforcement of pure streams laws and to enact adequate laws in states where they do not at present have them. In one state that I am familiar with, the average yearly salary for a sanitary engineer is from four to five thousand dollars, while the same engineer will easily receive from six thousand to seventy-five hundred in the same state from private industry. Under situations of this kind, the work of pollution control is bound to drag, and this and other similar conditions should be corrected immediately.

On the subject of co-ordinating the efforts of all governmental agencies, there is much that can and should be done to prevent the stepping on of official toes. Where watershed pollution control involves, as it very often does, whole areas of the country involving a number of states, certainly a co-operative arrangement must be worked out between the states involved and this is being done by many of the interstate commissions already in existence. In the interests of national health and welfare, certainly the Federal government has a real stake in projects involving pollution control and should share accordingly in the responsibility and in the costs. Local government and municipalities should assume their rightful responsibility for purely local

pollution control, with financial aid from state and federal government.

Under the heading of selling industry on the benefits of Pollution Control, there is another phase which is well worth considering from the stand-point of industry. This is the human relations benefits to be obtained in a community by promoting pollution control as a business policy. One tangible example of this was in my own experience. As President of the West Branch Manufacturer's Association in 1946 and 1947, part of our public relations effort consisted of a program of industrial waste control on the West Branch of the Susquehanna River in Pennsylvania. For many years, before the river had been polluted, it served as a great source of recreation for industrial employees. As part of our program we asked all our 125 members on the river and industry in the valley in general to quit polluting. Within a few years, the results were remarkable, with much of the industrial waste removed, boating and other recreational uses of the river again became very popular, and the goodwill gained on the West Branch for industry has been well worth the cost of the program. This is only one small example of a very important angle of pollution control by industry. It is a fact that much of today's pollution is laid on the door-step of industry and there is a feeling in the minds of the public that industry should lead the way in helping to clean up what it has helped to create. The costs of waste treatment installations by industry are quite liberally deductible from income tax by yearly depreciation and possibly this rate of depreciation should be increased to encourage industry, in its pollution control measures.

Point five, the final recommendation for doing the job of pollution control. Getting the public behind the effort. Nothing is more important than public support. We should support the effort in every way ourselves, by serving on Sanitary Disposal Boards, on area or regional pollution control committees, by talking pollution control to our service club connections, to our Chambers of Commerce, our labor unions, our manufacturer's associations, our granges and other organizations with which we may be connected. In other words, we must be the Prophets of pollution control in our respective states. Get the support of our local newspapers and radio stations. But, above everything else encourage and promote the teaching of pollution control in our schools and colleges. Be sure to get across to the coming generation, the importance which clean streams and an ample supply of usable water will play in their future well-being. It is a fact, in our generation a stream was considered a means for the disposal of filth, whatever it might be. Some of us have long since learned the fallacy of this concept, but the vast majority of the adult public has not and quite probably never will. But, the coming generation must be taught the truth. Young engineers must be sold on the value of preserving clean water in the future development of our industrial plant. Just as modern design is injected into our creations of architecture, so the importance of preserving clean water must be written into the minds of young industrial America.

In fact, this is a must we cannot avoid any longer! Population and industrial growth make it imperative! We cannot continue to live in our own filth. Great sums have been expended to relieve slum conditions in our cities and this is certainly for the good. It is a fact that crime, disease and degeneracy breed and flourish in slum neighborhoods and reflect on the character of the people, particularly young persons who must of necessity live in this environment. The same condition is created by uncontrolled pollution of our water-

sheds and as an example of this condition, we have only to visit some sections of our Pennsylvania coal regions, possibly the most despoiled areas on the face of the earth. No one has ever driven thru these sections without noticing the utter squalor of many of the people, the unemployment and desperate situation of their economic condition. Industry avoids these polluted and despoiled areas and the future of their people, of business and jobs is very bleak indeed. Therefore pollution does effect people and areas adversely, just as slum conditions do in creating an economic situation which we cannot long continue to tolerate.

Now, the total cost of the vast job of pollution control on the watersheds and tidal waters of the United States—? Estimated at from 10 to 12 billions of dollars and herein lies one of the greatest obstacles, which has slowed down the work everywhere—the heavy cost. However, it is high time we change our view-point on the cost of pollution control. Nearly everyone is agreed, we cannot continue at our present rate of polluting, without running out of water. Therefore, the cost, whatever the amount, is no longer an expense, but an investment in a facility vital to the economic future of America. This nation of ours has spent billions in various corners of the globe and in the interests of national security these investments were wise expenditures. But, we must now face the blunt fact that in order to sustain the productive ability necessary to maintain our position of national security, we must look to this investment right here at home. And, there is no expenditure we ever made which will more quickly pay itself out in increased national income, greater tax returns to government from now derelict lands along our rivers and a return of economic health to areas now blighted to extreme pollution.

In summing up these remarks:

The place of stream pollution control in watershed management—in most developments—right at the top of the list.

A safeguard to public health.

An assurance of badly needed water for communities already suffering from shortages and a guarantee of continuing ample supplies for those headed toward water shortages in the future if a program of pollution control is not started now.

How to do it—?

Follow the pattern of area or basin development with emphasis on every tributary and more grass-root voice in planning and control.

Strengthen and expand all pollution control agencies and coordinate their efforts.

Sell industry for their own immediate profit, future development and public good-will.

Intensify the effort of public education for pollution control, with special emphasis on the younger generation in our schools and colleges.

Do not be deceived into thinking the task can be further delayed—it can not.

The cost, while it is great, is an investment we must make, to maintain the health of America and sustain the efficient productive capacity of industry. Both safeguards are vital to our national security.

We cannot continue to progress without making this investment in up-to-date modern pollution control, any more than we can continue to turn out modern products in our factories with antiquated, worn out machines.

. . . *The End*











A Duckling Is Born

FEW Pennsylvania sportsmen have ever witnessed the birth of a wild duck. But up in Canada's prairie provinces, where the bulk of North America's waterfowl is raised, this duck-rearing business is old stuff.

While shooting movies and stills for Duck Unlimited in southern Alberta, Ormal Sprungman, camera editor of *Sports Afield,* flushed a hen mallard off her nest near a marsh. Walking straight to the site, he set up his still camera over the nest, and filmed the entire egg-hatching process from the time the first eye-tooth pipped the shell until the last duckling wiggled free from its armor. Color movies in 16mm also were obtained, requiring over three hours to film and scarcely three minutes to screen.

The duckling is claimed to rotate inside the shell, changing posture and chipping its way out by cutting a circular fracture around the larger end of the egg. This splits the circumference of the egg, causing the lid to hinge back on its membrane as the duckling emerges.

Once the female duck ends her egg-laying, she immediately sets to work on incubation, which period ranges from 24 to 26 days. An average mallard clutch will contain from 6 to 16 eggs, averaging around 10. Although there are records of clutches of 9 eggs hatching in three hours, four to five hours are often required to hatch an entire clutch. It is doubtful whether the female aids in the hatching process, but she may remove broken bits of shell by turning the egg. Usually, the young must take care of itself. In the hatch, pictured here, some assistance was given by the observers to speed up the process before light grew too weak for photography.

—Ducks Unlimited Photos by Ormal Sprungman.

Outdoor Reveries



Spring Symphony

By John H. Day

IT ISN'T too often the countryman gets a good look at an eagle. So-called sportsmen have thinned the ranks of this magnificent white-headed creature until the bird which has become our national symbol risks his life every time he goes scavenging along his favorite lake or ocean beach. In the west they even shoot down the golden eagle from airplanes, a "sport" which must be fully as exciting as paddling alongside a bull moose and blasting the lumbering creature at about forty feet with a high powered rifle.

The Goose-lookers were on their annual pilgrimage to the famed Pymatuning waterfowl reserve when word came that there was a new eagle's nest in a pine tree deep in the reservation. Just the mere mention of eagles is enough to speed the countryman's pulse rate. Soon a small group had detached itself from the main entourage and was headed via some back roads toward the nesting site.

Our guide was a young man whose first love is the woodlands but whose immediate destiny was the army. He parked our cars at the end of the road, then led us along a little-used railway line for a half mile or so. Then we cut into the reservation, following along a lovely gossipy brook which shouldered its way boldly through the alders.

We were still far distant from the nest tree when the great birds put in their first appearance. They flew in wild scolding circles, low above the trees, cackling in a harsh, creaky voice. The cry sounded as though they said "kek-kek-kek-ek-ek-ek." The powerful beak, at least half as long as the bird's head, was half open with each outcry.

Anything that lifts up a man's eyes is good. We had enough beauty in the blue arch of the sky, with its moving, changing cloud shapes of snowy white. But those eagles seemed to complete the picture. They are

birds of large ideas. Their joy is height and depth and vast spaces. No man who loves the wildwood trails can look upon these birds without emotion.

We moved slowly ahead, stopping occasionally to catch those gorgeous birds in powerful field glasses. As they banked and veered in the full sun the white tail and the white head were distinctive field marks. Their flat-winged soaring is also a good field mark in identifying these birds at a distance. The buzzard soars with his wing tips turned up in what the airmen call a dihedral. The osprey has a kink in his wings when soaring, but the eagle's look perfectly flat.

Finally we came to the nest, a huge accumulation of sticks, sod, weeds, corn stalks, hay and other coarse materials about 80 feet up in a massive white pine. Oddly enough the eagle doesn't seem to build in the tree top, like an osprey, but selects a site well down in the tree and yet high enough for safety. We did not want to molest the nest in any way, so we stayed away from the tree, using our glasses to view the structure, which I judged to be at least six feet across and three to four feet in "thickness." Some of those sticks were really small timbers at least three inches through.

Our guide had climbed the tree a day or two before. He reported one downy nestling, two skinned muskrats and three dead carp as occupants. The bald eagle is a notorious plunderer of the osprey's catch, so perhaps those carp had been come by in a second hand manner.

I'll be a long time forgetting the majestic grandeur of those eagles as they escarted us in and out of their home bailiwick. I think my thoughts soared a little higher all the rest of the weekend. Whatever his faults may be, and he has many, the bald eagle is a solid citizen, deserving of the respect and protection of the millions whose symbol he is in a suspicious world.

Once in a great while the countryman asserts himself and spends a lazy Sunday doing exactly nothing. He prepares for this "off-day" by cramming his interior with peanuts and candy and buttermilk and other nightmarish mixtures during his Saturday evening in town. Next morning he casts a jaundiced eye at the clock, decides he doesn't feel quite up to going to church, and rolls over for another forty winks. Once safely past church time, his conscience quits bothering him and he gives himself over shamelessly to a morning in bed, notifying the family that he "don't feel so good."

Finally the aroma of breakfast in the kitchen brings him to the floor and he wanders out half dressed to turn in a yeoman's performance at the table. Then he dawdles through his chore with the dish towel, complaining how cold the house is since he shut off the furnace. His wife forces a big dose of some terrible concoction into him. After that he is really off his feed for the remainder of the day.

He pulls on slacks and sweat shirt and moseys outside, minus his shoes, to find the warm sunlight magnificent, compared with the clammy chill in the house. He heads for the garage, throwing wide the doors with a vague idea of doing something or other with the car. There are a half-dozen or so brown May beetles on the floor, trapped overnight in the garage where they had been tilting at the light. He watches these fellows crawl about for a time and then notices a large crane fly dancing at the window, while a beautiful white moth sleeps on the casement.

These diversions make him forget all about the car and he settles himself on a bench in the sun. He notices the pretty little yellow oxalis blooming in the grass at his feet, and kicks aimlessly at a patch of the star-

flowered chickweed. He also notes a large patch of mustard which should be pulled out of the lower field behind the house, but hastily averts his eyes from this unpleasant scene, reminding himself that tomorrow is another day.

Suddenly he sees how inviting the warm sidewalk looks, slanting up through his yard in the sunlight. Impulse leads to action and soon he is flat on his back on the warm cement, hat over eyes, soaking up the good May sunshine. A chorus of singing birds soothe his repose, and he drifts off into deep sleep, with the silver fluting of the woodthrush echoing through his slumber.

By the time he awakens, he is a picture of the truism that laziness leads to slothfulness. He makes his way into the dining room and helps to demolish the Sunday roast with unshaven chin and uncombed hair. His family operates the household in mortal fear of company. After loafing through the dish drying he finally prevails upon his wife to drive him out to a favorite hiking spot and park the car a half-mile down the road to meet him when he comes out of the thickets.

Supported by his ailanthus walking stick he enters the woods by the roadside at a point where a large culvert drains into a wildly beautiful groge. As he reaches the stream bed he is shocked full awake by a blaze of brilliant scarlet beauty where a patch of Indian pink lights up the dark surroundings.

Not more than ten paces down the ravine he comes across a clump of mertensia, the Virginia blue bell, now past blooming peak. This is quite a surprise and a pleasant one for this plant had been thought to be nearly extinct in the valley. Wild ginger crowded in colonies upon the banks of the rocky ravine and the faded blue waterleaf was coming into bloom. Here and there a beautiful wild geranium accented the color scheme on the hillsides.

He fumbles his way carefully down the rocky declivity, growing "tireder" by the minute. In the swamp stretch where he turns back towards the roadway a host of vicious mosquitoes come out to harass his passage. He gets up steam and beats a retreat through the bottomland, bruising his way through great savory clumps of sweet cicely which he knows better as sweet anise.

Finally he lumbers out to the car wringing wet with perspiration and completely done out. The evening finds him curled up contentedly on his favorite couch. His score for the day as regards household accomplishment is practically zero, but the immense relaxed peace in his heart will pay off large dividends in the busy days to come.

There's music in the air these days. The outdoorsman whose ear is attuned to the annual Spring symphony finds the air-waves jammed with the mad May music from a multitude of pulsing feathered throats. Each passing day brings the return of additional choristers to swell the





wayside hymn of praise to Him who notes the fall of every sparrow. The full ensemble is a true tone poem, with plaintive basic melodies interlaced by counter point which runs the gamut from the crow's rough talk to the house wren's bubbling potpourri.

Some of this exuberance must certainly be the vocal expression of sheer delight with the new season and the return to old familiar scenes. The chimney swifts came back to our valley on a recent evening. I was busy planting a seed bed in the flower plots when out of the sky came the cheery chittering of these jet-propelled speedsters, probably just in after an overnight hop from the Caribbean. I looked up to find the sky alive with a hundred or so of these quite common summer residents. They zoomed and skidded about in a sort of air dance, as though celebrating the return to their nesting area.

The "song" of these swifts is nothing to write home about, but it has its place in the vernal chorus. Another rather rare little fellow came by for a visit on a recent evening. About all he contributes to the choral effort is a mouse-like squeak. This was the blue-gray gnatcatcher, a tiny fellow scarcely more than four inches long who looks like a miniature catbird with a long tail.

We were riding along a red-dog country road when we met the bobolink who sings one of the solo parts in the spring symphony. He was coursing above the meadow as we passed, and obligingly came in to perch on a fence post by the roadside. We stopped the car and listened as this veteran trouper threw back his head and "poured it on" with real showmanship.

Every spring when the trout start legally biting in the hemlock country the countryman renews acquaintance with one of our most important citizens. Fishermen who are purists look down their noses at this fellow, scornfully calling him "garden hackle" or even more insulting names. He's not much to look at; most members of the distaff sisterhood survey him with extreme distaste; but in the overall scheme of things he plays a leading role. He has earned well his title of chief tender of the soil of the world.

Thousands upon thousands of his clan have gone down the hungry maws of robins, old and young. And countless more thousands yearly lure sunnies and bullheads to fish hooks in the care of small boys. But his name is legion and he takes these decimations in stride, meanwhile bringing to the surface annually in every acre of ground he occupies an estimated eighteen tons of enriched soil.

The earth worm is a truly remarkable creature. He has no eyes but his skin is so sensitive to light that he can distinguish between light and darkness. He is completely deaf, but

acutely sensitive to vibration. Any angler who has "picked" nightcrawlers by flashlight on the lawn after an evening shower knows that the least misstep will send him slithering under ground in a hurry.

He's a ploughman of real skill. Usually he burrows only from twelve to eighteen inches into the earth. But during extremely dry periods he may go as deep as seven or eight feet. He breathes through his skin, and so must have some moisture about his body. If his skin becomes dry he suffocates. Lured into exploring sidewalk areas during damp misty midnight hours, he finds himself stranded at sunup and literally chokes to death before he can work his way off the dry pavement.

He's been ploughing and liming and mulching for centuries but he wears no green thumb as a sign of his profession. When he burrows he "eats" his way into the ground. The soil he takes into his mouth goes through a set of special grinders in his gizzard, and is given a dosage of lime while in his stomach. Thus, when it leaves his body it is refined and enriched.



It's sort of spooky to hear the angleworms rustling among the leaves during the dark hours. They come up out of their burrows to forage for bits of food and to seek worm companionship, and they pull bits of leaves into their burrows for a lining. When they are hard at work they can raise a real racket on a quiet, windless night. The big fellows known as "night crawlers" always keep one foot in the grave, so to speak, and the angler who would capture them must be fast, for they can zip down under in a trice.

If all the angleworms that were drowned by avid fishermen on the opening day of trout season were placed end to end the total mileage would be astounding. Many of these lowly creatures are dug up in the spring, placed in boxes and fed coffee grounds to "scour" them so they'll look redder and more enticing on the hook. Some folks even make a business of raising earthworms commercially, and they do quite well at it.

Scientists estimate that there are about 50,000 earthworms in an acre of garden soil. Each of these creatures is hard at work processing the earth in his particular domain and bringing up the towerlike "castings" which are formed of excreted earth. The worker uses his tail as a trowel in placing these castings. When searching for food his head is out of the burrow. This means that he must make his home, narrow as it is, with a view of being able to turn in it.

Much of the beauty of the out-of-doors hinges on the soil conditioning work of this diminutive conservationist. It is doubtful that there are many other animals which have played so important a part in the history of the world. If you want to show your gratitude to your own worm community for keeping your garden in shape, feed them a little raw oatmeal. They'll relish every crumb.

. . . *The End*



Stray Cats Pose Problem

SULLIVAN COUNTY—It is very disheartening to see the number of stray cats that are roaming this section after not seeing them for a while. They are mostly young ones. I cannot see why any family should have so many cats when they cannot feed them, so they have to go and get the food they need in the best way that they can. I feel especially bad when I see, as I have in the last spring and summer, where some stray cat (supposedly) gets into a flock of young turkeys. This one cat cleaned out six young turkeys before I finally caught up to it with a 38 slug. This is not the only case that has been seen in this county but it is one to make a person think. I wonder how many young rabbits and birds are killed by these predacious animals every year. The figure would be amazing I am sure if it were positively known. One case where the cat got the worst of it was where it was chased by the hen after it attempted to get some of her little ones and I was tickled when I was told about it.—District Game Protector Patrick W. Craven, Benton.



Pre-Season Angler

WYOMING COUNTY—On Sunday, February 14, I observed a mink busily engaged in trout fishing through a channel in the ice on one of our trout streams that had just been stocked a couple of days before. He would slide into the water at the same spot each time, reappearing in a matter of seconds and running up over the bank to a tunnel underneath a huge mass of ice along the shore. I watched him make several trips to the water, each time emerging with a flopping trout gripped in his jaws and when I was certain that he had no intention of quitting until the pool was empty of trout, I sped him onward to greet the ranks of his departed ancestors. Afterwards, I chopped a hole into the cavern under the ice cakes and found his hidden cache—sixteen brown and rainbow trout from seven to twelve inches long.—District Game Protector Thomas W. Meehan, Mehoopany.

Rabbit Trap

CAMBRIA COUNTY—While releasing rabbits in Croyle Township last February, accompanied by Deputy Hudson, a rabbit was found in a tennis court enclosure, unable to find its way out. We drove the rabbit out through the open gate and then closed the gate so that no winter visitors would die instead of having a game of tennis.—District Game Protector L. D. Mostoller, Johnstown.

Deer Trained to Death by Dogs

CUMBERLAND COUNTY—On the evening of February 25, 1954, I received a call from the tower operator near Mt. Holly Springs to the effect that an eastbound train had struck and killed two deer somewhere in the vicinity of Barnitz. Proceeding to the area, I finally found a young doe lying on the track and a button buck with a broken neck lying at the bottom of a ditch.

According to a lady living in the neighborhood, the deer being chased by dogs, had stopped on the railroad to watch for their pursuers when the train approached. The engineer, despite repeated blasts on the air horn, was unable to scare the deer from the tracks. Upon dressing the doe, I found her to be carrying twin fawns. Although killed by a train, the wiping out of this little deer family can be charged to the depredations of dogs running at large.—District Game Protector Homer H. Thrush, Boiling Springs.

How High Can A Cat Climb?

MONROE COUNTY—During February, Deputy Stanton and I were patrolling near Gouldsboro, for beaver violations. I happened to notice a cat about twenty-five feet up in a tree, probably waiting for a squirrel to come out of a hole which was in the trunk of the tree. I killed the cat with two direct hits from my 38 calibre Colt. The cat was a big male and in good condition because it was feeding on game. The cat was a mile or two from any house.—District Game Protector John Spencer, Mt. Pocono.

Even With No Snow

MONROE COUNTY—We have had what may be considered an open winter this year, but I have found more deer that died from starvation this year than in any year since I have been in Monroe County. All were 1953 fawns.—District Game Protector John H. Doebling, East Stroudsburg.



Litter-bugs

ELK COUNTY—When checking beaver dams in the past month, I had occasion to walk a distance of a little over two miles along Legislative Route 24013, which goes through State Game Lands 25 from Glen Hazel to St. Marys. This walk was on the lower side of the road. Because the leaves are off it is possible to see considerable distance down through the woods. There was every type of garbage scattered almost the entire two miles. Everything from common kitchen garbage to automobile tires, a kitchen stove, tin cans, and beer bottles by the hundreds. Beer bottles were scattered all over the berm of the road and for considerable distance in the woods, making parking on the berm more or less hazardous to tires. Our wildlife by no stretch of the imagination could ever despoil our forests as the human race has done.—District Game Protector Vern A. Van Order, Wilcox.

Mallards In the Spring

LUZERNE COUNTY—Last February, while checking a beaver dam on State Game Lands 187, that had approximately ten inches of ice, I came across a spring not more than three feet square. You could imagine



my surprise when four big fat mallards took off. I hid in the nearby brush while they circled. This must have been the only water available for within a couple of minutes they landed on the same spring from which they took off.—District Game Protector Norman J. Forche, Conyngham.

Wild Cat

ARMSTRONG COUNTY—In July, 1953, in the process of releasing ten pairs of quail for Officer Brion of Armstrong County, on State Game Lands 137 Propagation Area, I saw a domestic marked tiger cat of average size. On the last day of the 1953 doe deer season, while participating in a deer drive on this same area, I had the pleasure of destroying this same cat which at this time weighed approximately thirty-six pounds. Incidentally, since the quail were released in July, 1953, I haven't seen any signs of them, so all evidence points to the fact that cats are one of our more serious problems in the restoration of wildlife.—Assistant Superintendent Clarence Wilkinson, Southwest Pheasant Hatchery.

Flying Rabbit

BLAIR COUNTY—While driving home one night in September on a back road of Snyder Township, Deputy Game Protector John Dunkel was amazed to see a rabbit flying right up off the ground in front of his car. After taking a closer look, Deputy Dunkel noticed that a small rabbit had been killed on the road and a screech owl of the gray phase was attempting to take the rabbit to some secluded tree for a nice meal. Several times the owl would get the rabbit a few feet in the air only to drop it back to the road. After being disturbed before completing his project the bird flew back into the night to try for an easier meal.—District Game Protector Dean M. Crooks, Bellwood.

Turkey Teaches Dog Tricks

McKEAN COUNTY—Howard and Robert Defibaugh, local sportsmen, told the following story. On January 1, 1954, they were hunting snowshoe rabbits when they came upon a flock of approximately 35 turkeys. Their dog ran into the flock and scattered them except for five of the largest. One turkey turned on the dog and gave it a good flogging. Howard said there was a three-inch cut on the dog's nose, and one ear was slit, and cuts on the shoulder, and one front leg. The dog soon returned to Howard and Bob, and wouldn't leave them. Several days later they went hunting again, coming upon the turkeys, the dog made no attempt to go after them.—District Game Protector William H. Shirey, Smethport.



How Was That Again?

LACKAWANNA COUNTY—The great number of calls received during the year asking for information whether this or that is legal can usually be decided immediately, but a receipt received from a charitable institution for an accidentally killed deer still has us puzzled. The receipt read "received from Game Protector Sloan one illegitimate deer."—District Game Protector Philip S. Sloan, Dalton.

Working Arrangement

VENANGO COUNTY—A short time ago Deputy Nunemaker and I were checking beaver trappers in the Miller Farm area near Titusville. As we were coming back to the car we noticed an alder completely stripped of its bark by a porcupine. We were discussing the project as to how the porky trimmed the limbs so small. The tree itself was only about two inches in diameter and was trimmed out to the smallest limb. As we looked things over we noticed there were plenty of rabbit signs at the base of the tree. Apparently Brer Porky and Brer Rabbit had a working agreement because Brer Rabbit had spent considerable time feeding on the surplus bark that Brer Porky dropped.—District Game Protector Leo E. Milford, Oil City.





Crow Hunting Champion?

PERRY COUNTY—We have an ardent crow hunter in Perry County that deserves a lot of credit. In 1953 he shot 1,143 crows and from December 15, 1953 until February 7, 1954, he killed 407 crows. His name is Roscoe Seiler, R. D., Liverpool, Pa.—District Game Protector Harold E. Russell, New Bloomfield.

Veteran Escape Artist

CLINTON COUNTY—Recently a beaver was brought into my office to be sealed. Because of his size, we put him on a scale where he weighed 55 pounds. But what was interesting was the number of times that this fellow had been in traps and gotten out. One front foot was gone completely, and the stub healed over. On the other front foot, two toes were missing and healed over. One back foot had the fresh trap mark where he had been recently caught, but on this foot two toes had been taken previously and the wound healed. The other back foot showed an old trap mark from some previous season. Even this beaver's tail had a big chunk taken out of it at some previous time. This old fellow must have been as familiar with traps as most trappers.—District Game Protector Charles F. Keiper, Renovo.

SLANTS and ANGLES



Dear Sir:

I am not much of a hand for writing but after reading a couple of articles in the daily paper, I decided to give my views on the idea of abolishing doe deer season in the state.

I have been hunting deer for 26 years and I think there are more deer now than at any time since I started to hunt. There is nothing I enjoy more than getting out and hunting. I think the reason so many fellows think we should quit hunting doe is because they hunt the way I always did till about four years ago. Up until that time I got the idea that deer were getting scarce, just because I would go into the woods and build a fire and sit there waiting for a deer to come up to me. I remember four years ago my brother-in-law and I were up in Forest County and we were hunting like always. Along about noon we decided to either give up and go home or try something else. So we went to the car to leave. After we had unloaded our rifles, I said I wonder if there would by chance be anything over in the next hollow which was about two and a half or three miles away. Well, being as we both like to be in the woods, we loaded our rifles and started out. Believe me, I shall never regret having made the decision to go, because we didn't any more than get to the hollow I mentioned, until we saw deer and plenty of them. From that time on, I go after them. I have wandered around all day and never saw a person back in the woods but I can't remember being out a day in the last four years that I didn't see deer. If you do see anybody, they are within one-half mile of the road most usually sitting by a fire or making a small circle of about a mile in diameter. I have talked to hundreds of fellows who hunt in this fashion and they all say there are no deer in the woods, that the Game Commission should cut out the doe season.

Well, my opinion is there are lots of deer. But since we have turkey hunting now which we didn't a few years ago, a lot of our small game hunters have turned to hunting turkey and squirrel. Then your bear season comes in just before deer season. If you ask me the deer are bound to be back deeper in the woods. I know this much for sure. If anyone takes the trouble to go for a ride at night with a good spotlight, they will see that there are still plenty of deer.

Now don't anybody get the idea I am against a Sportsman's Club or the Game Commission. I have belonged to one certain club for 26 years and I think the Game Commission has done a wonderful job of bringing back deer, turkeys, bear, ringnecks and what have you, but fellows you have to really get out and hunt to get deer. I know they are there because I find them every year.

By the way, we brought deer out of the hollow I mentioned before.

Very truly yours,
A SPORTSMAN
Franklin

Federal Aid In Wildlife Restoration — Northwestern Pennsylvania



Pymatuning Waterfowl Refuge

The following article, third in a series of six, is the result of combined effort and teamwork. Field data and reports were compiled by Earl E. Smith, Land Utilization Assistant, and Egbert G. Musser, Pittman-Robertson Area Leader, of the Northwest Division. The article was prepared for publication by Division of Land Utilization personnel at Harrisburg. Photos by Commission photographers.

FEDERAL Aid in Wildlife Restoration was inaugurated as a program on July 1, 1938. Under this legislation, known as the Pittman-Robertson Act, Wildlife Research and Restoration Projects are approved in various states, and funds provided to finance seventy-five percent of the costs. (Expenditures for wildlife protection, general departmental administration, propagation and stocking of game are not allowable under terms of the Act.) Programs are financed from federal taxes imposed on sale of firearms and ammunition. Each state receives a proportionate amount of this fund each year, dependent upon number of licenses sold and the state acreage compared to the whole of United States.

From 1938 to 1947 receipts from these excise taxes were limited and projects were confined largely to purchase of hunting lands and research problems.

In 1948 the Pennsylvania Co-operative Farm Game Program was expanded under terms of a Pittman-Robertson project, approved to lease, establish and develop new areas. Since 1949 development of State Game Lands and other leased areas has also been partly financed with these federal funds. All activities receive prior approval and periodic inspection by personnel of the United States Fish and Wildlife Service.

This article is written to acquaint interested sportsmen and conservationists with the use of Federal Aid

monies. It covers accomplishments in wildlife restoration throughout Northwestern Pennsylvania, which includes Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango and Warren Counties.

Within the Northwest Field Administrative Division of the Pennsylvania Game Commission is 123,753 acres, (slightly less than fourteen percent) of the 902,179 acres of State Game Lands; 200,951 acrēs (nearly twenty percent) of the 1,048,145 total acres of Cooperative Farm Game Projects; and 15,434 acres (slightly less than fourteen percent) of the 111,819 total acres of other leased projects throughout the state. In addition, approximately 250,000 acres of Allegheny National Forest falls within this division and is managed for wildlife under terms of a Cooperative Agreement.

Federal Aid funds have helped finance the acquisition of many State Game Lands. In the Northwest Division acreage in various counties were purchased as follows:

County	*Acreages*
Butler	346.2
Clarion	77.0
Crawford	7,048.0
Erie	2,840.5
Jefferson	135.9
Mercer	99.7
Venango	154.5
Warren	1,973.9
	12,675.7

These areas were inspected and approved by employes of the United States Fish and Wildlife Service.

Many of the State Game Land tracts, primarily those in Erie and Crawford Counties, are old farms and

PGC Photo by Parlaman

Fields cleared in wooded areas of State Game Lands are planted to small grains and seeded to succulent clovers, best providing essential seasonal foods for forest game species. The resulting increase in insect life on these areas is also beneficial to wild turkeys, grouse, and other birdlife.





PGC Photo by Parlaman

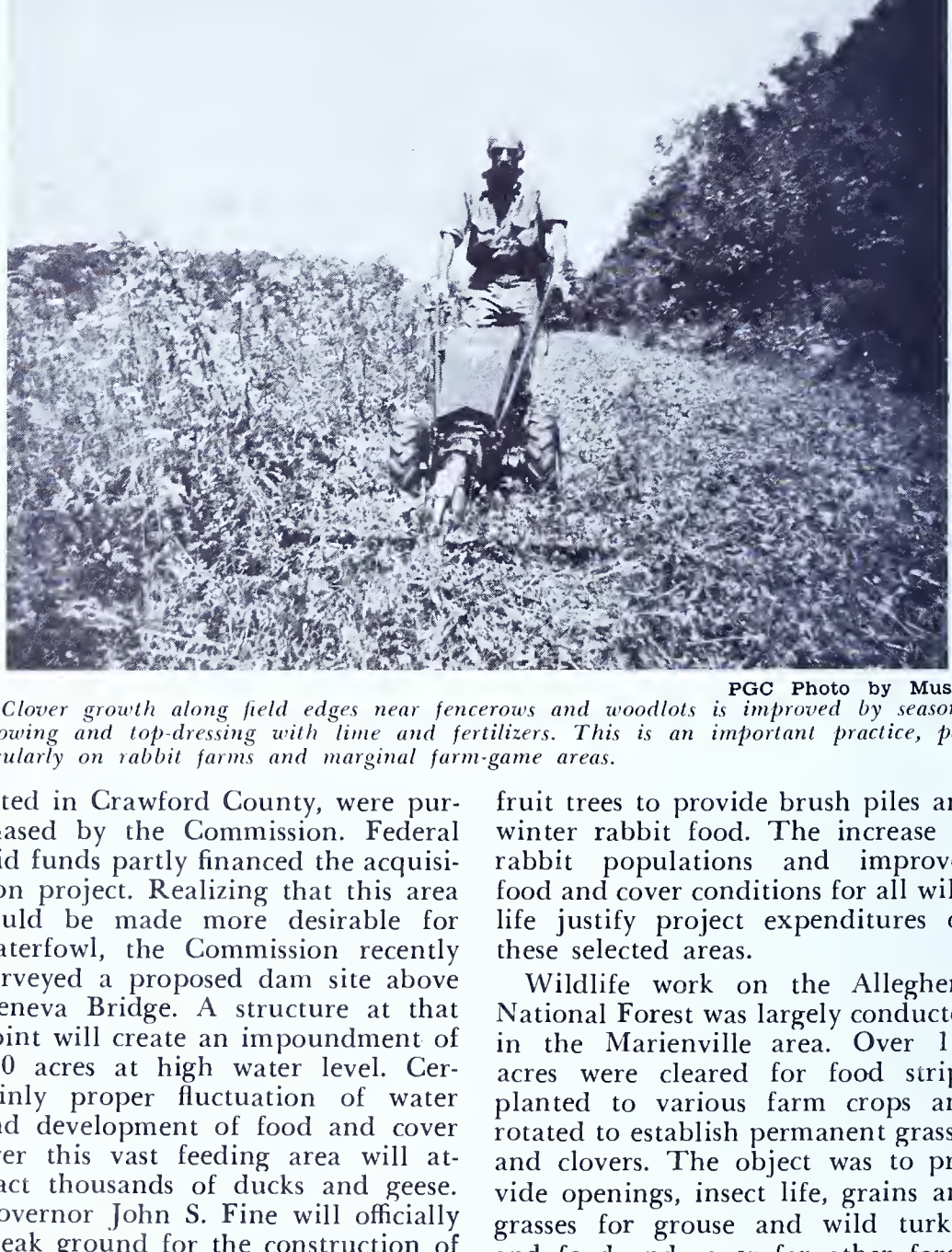
Old fields are retained as open areas and the edges improved by border cuttings. Existing apple trees are released from suppression and pruned to increase food for wildlife.

woodlot areas. Development of these lands involves a program of planting annual food strips and field areas, crop rotations, mowing of clovers to improve succulent foods, cutting of large trees along woodland borders, and planting of evergreen trees and game food producing shrubs. Other larger tracts, located in mountainous sections of Venango, Warren, Forest, Clarion and Jefferson Counties have responded to management techniques which include removing of timber growth to create forest openings, planting of food strips and grass areas for upland game species, releasing of game food producing shrub species by cutting overshadowing tree growth and creating additional deer browse and ground cover for other forest game by thinning timber at select locations. Since Northwestern Pennsylvania supports practically all native game species, the restoration program has been quite varied.

All Game Lands in the division have received their proportionate share of monies allotted under this program. By referring to the detailed map, sportsmen may become better acquainted with locations of project areas. Although a great amount of work remains to be done, it must be noted that wildlife restoration is a long term venture, which will expand as additional funds are made available.

Erie and Crawford Counties and portions of other counties lend themselves to expansion of the Waterfowl Program. Numerous small ponds or potholes have been constructed to improve the habitat. Surveys have been completed by project personnel for a small dam program in Forest County. Other sites will be surveyed and structures completed as the program gains momentum.

During the past several years over 3,456 acres of Conneaut Marsh, lo-



PGC Photo by Musser

Clover growth along field edges near fencerows and woodlots is improved by seasonal mowing and top-dressing with lime and fertilizers. This is an important practice, particularly on rabbit farms and marginal farm-game areas.

cated in Crawford County, were purchased by the Commission. Federal Aid funds partly financed the acquisition project. Realizing that this area could be made more desirable for waterfowl, the Commission recently surveyed a proposed dam site above Geneva Bridge. A structure at that point will create an impoundment of 550 acres at high water level. Certainly proper fluctuation of water and development of food and cover over this vast feeding area will attract thousands of ducks and geese. Governor John S. Fine will officially break ground for the construction of this dam.

Many Rabbit Farms in Butler, Clarion and Jefferson Counties have been improved by planting evergreen trees and shrubs for cover, cutting woodland borders, top dressing and mowing of adjacent clover strips to improve the succulent green growth and the releasing and pruning of fruit trees to provide brush piles and winter rabbit food. The increase in rabbit populations and improved food and cover conditions for all wildlife justify project expenditures on these selected areas.

Wildlife work on the Allegheny National Forest was largely conducted in the Marienville area. Over 118 acres were cleared for food strips, planted to various farm crops and rotated to establish permanent grasses and clovers. The object was to provide openings, insect life, grains and grasses for grouse and wild turkey and food and cover for other forest wildlife. Adjacent areas were planted with evergreens and game food producing shrubs. Forest cuttings and the releasing and pruning of fruit trees created food and cover for cottontail rabbits, grouse and other game species.

Primary Refuge No. 510, com-

STATE GAME LANDS—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
January 1, 1949 to December 31, 1953

NORTHWEST DIVISION

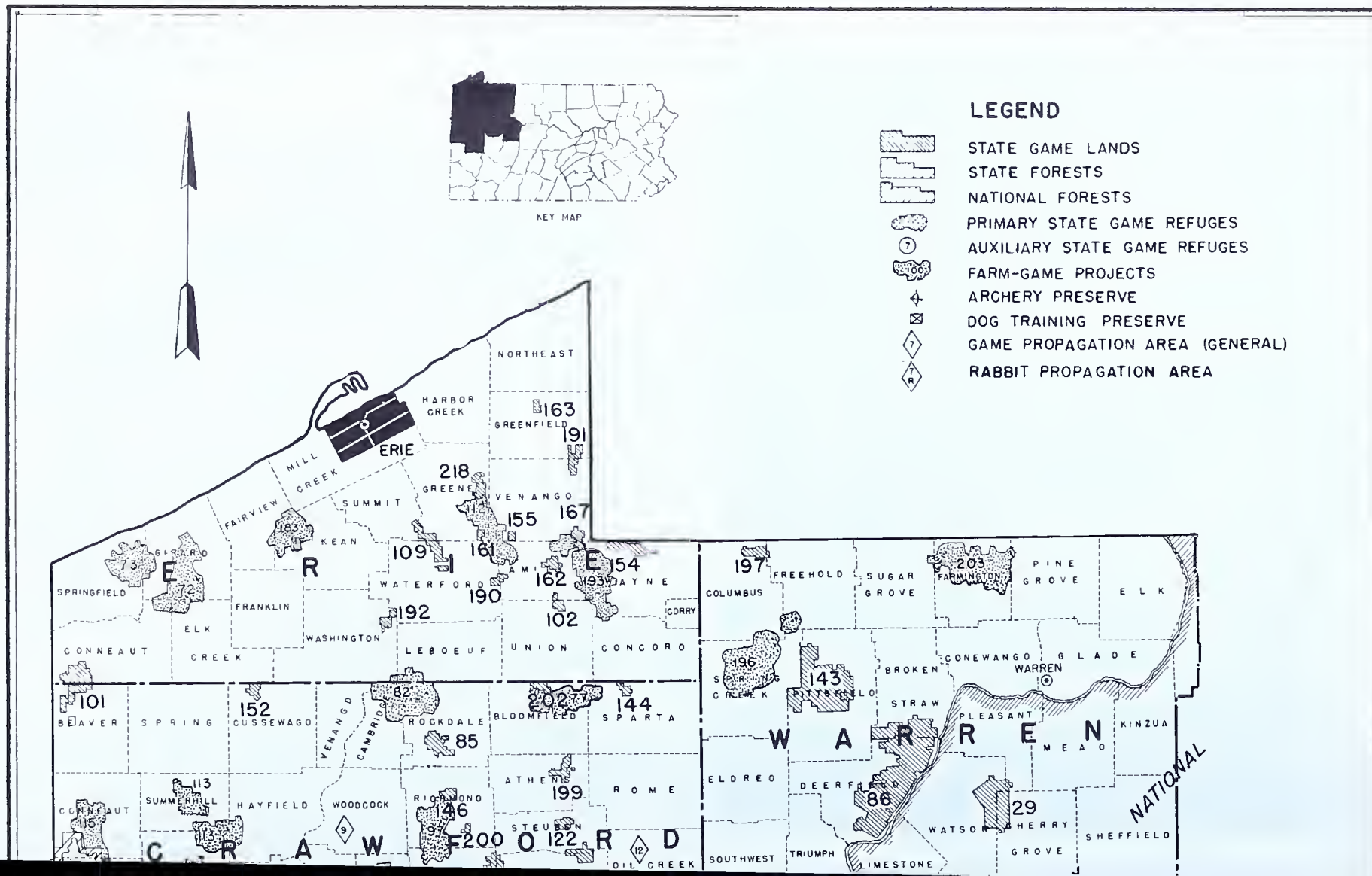
County	Food Strips: Cleared Acres	Food Strips: Planted to Grains Acres	Food Strips: Seeded to Clovers Acres	Food Strips: Maintained in Sod Acres	Equipment: Roads Serviced Miles	Seedlings: Evergreens No.	Seedlings: Others No.	Forest Cuttings: Release Acres	Forest Cuttings: Border—Edge Width* Ft.	Forest Cuttings: Border—Edge Length Ft.	Fruit Trees: Released No.	Fruit Trees: Pruned No.
Butler	81.3	372.5	177.5	239.0	0.3	17,845	47,106	329.5	33	17,950	3,552	1,790
Clarion	128.5	450.0	160.0	235.0	....	36,300	20,075	101.0	20	4,400	352	370
Crawford	101.0	864.0	118.0	274.0	0.3	83,374	53,384	162.0	33	2,425	1,603	1,771
Erie	155.0	1,330.5	214.0	365.5	1.5	59,860	75,140	223.0	72	3,200	2,700	1,604
Forest	94.0	235.0	29.0	33.0	....	4,775	45,818	17.0	33	50,119	3,399	303
Jefferson	6.0	167.5	103.0	160.0	....	10,250	12,750	6.0	34	22,550	448	449
Lawrence	66.0	569.5	150.0	115.0	0.5	30,500	23,500	24.0	15	850	157	157
Mercer	82.5	320.5	13.0	81.5	....	23,125	34,702	100.0	..	.....	1,025	975
Venango	146.5	416.0	106.0	158.5	....	129,600	115,075	404.0	26	5,780	3,268	1,673
Warren	219.2	509.5	169.5	269.5	10.8	40,500	98,293	346.0	24	25,900	4,816	3,195
Total	1,080.0	†5,235.0	1,240.0	1,931.0	13.4	436,129	525,843	1,712.5	32*	133,147	21,320	12,287

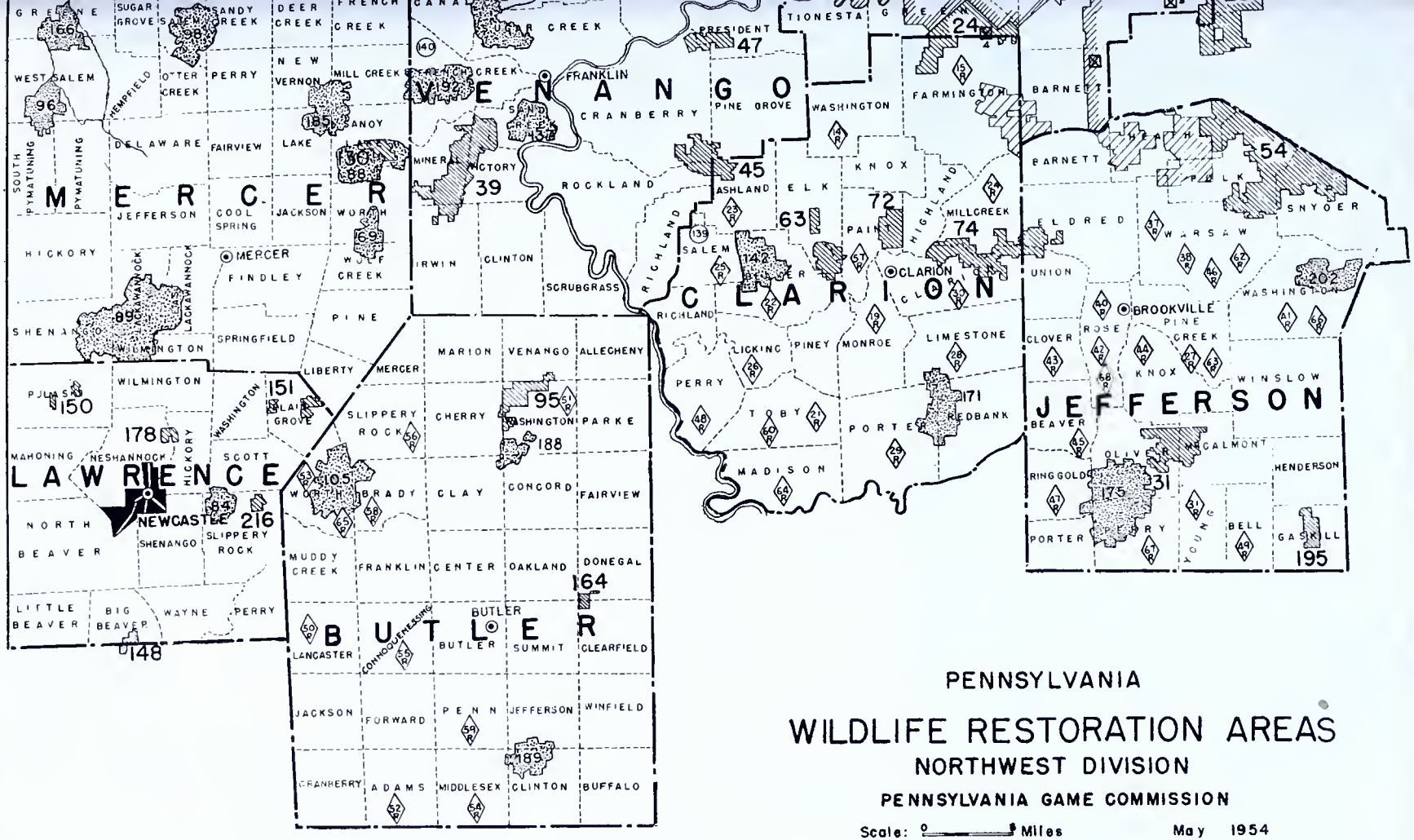
MISCELLANEOUS

Butler .....Direct seeded 3 acres to shrubs.
Clarion .....Grafted 18 apple trees.
Crawford ....Constructed 3 small ponds or potholes for waterfowl.
Erie .....Constructed 2 small ponds or potholes for waterfowl.
Forest .....Constructed 1 small pond or pothole for waterfowl.
Jefferson ....
Lawrence ....
Mercer .....4,200 multiflora rose transplanted.
Venanga ....
Warren .....Seeded 5 acres of woodland border.

* Average. † Surplus grains were harvested and distributed for use by wildlife.

Note: Seedling nurseries were maintained on State Game Lands in Erie and Warren Counties, producing a portion of the multiflora rose stock utilized on adjoining lands.


KEY MAP
LEGEND
STATE GAME LANDS
STATE FORESTS
NATIONAL FORESTS
PRIMARY STATE GAME REFUGES
AUXILIARY STATE GAME REFUGES
FARM-GAME PROJECTS
ARCHERY PRESERVE
DOG TRAINING PRESERVE
GAME PROPAGATION AREA (GENERAL)
RABBIT PROPAGATION AREA
NORTHEAST
HARBOR CREEK
ERIE
MILL CREEK
FAIRVIEW
SUMMIT
GREENE
VENANGO
GREENFIELD
163
191
218
155
167
109
161
162
154
193
197
FREEHOLD
SUGAR GROVE
203
FARMINGTON
PINE GROVE
ELK
COLUMBUS
KEAN
SPRINGFIELD
FRANKLIN
WATERFORD
190
192
102
CORRY
ELK CREEK
CONNEAUT
WASHINGTON
LEBOEUF
UNION
CONCORD
196
143
BROKEN STRAW
CONEWANGO
WARREN
GLADE
PLEASANT
KINZUA
MEAD
101
BEAVER SPRING
152
CUSSEWAGO
82
ROCKDALE
85
202
BLOOMFIELD
144
SPARTA
ELDRED
DEERFIELD
86
29
WATSON
SHERRY GROVE
SHEFFIELD
NATIONAL
113
SUMMERHILL
HAYFIELD
WOODCOCK
RICHMOND
146
ATHENS
199
ROME
STEUBEN
200
122
OIL CREEK
SOUTHWEST
TRIUMPH
LIMESTONE
CRAWFORD
CONNEAUT
VENANGO
CAMBRIDGE


MERCER
VENANGO
CLARION
JEFFERSON
LAWRENCE
BUTLER
NEWCASTLE
FRANKLIN
MERCER
CLARION
BROOKVILLE
PENNSYLVANIA
WILDLIFE RESTORATION AREAS
NORTHWEST DIVISION
PENNSYLVANIA GAME COMMISSION
Scale: 0 5 Miles
May 1954

COOPERATIVE FARM-GAME PROJECT PROGRAM—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS

January 1, 1948 to December 31, 1953

NORTHWEST DIVISION

County	Leased		Safety Zones Established Dismantled	Refuges Established Maintained	Food Strips and Nesting Cover		Contour Strips	Seedlings Planted			Wildlife Borders Developed
	Farms	Acres			Strips	Acres	Acres	Coniferous	Multiflora Rose	Other Species	Lin.Ft.Cut
Butler	108	8,919	649	12	209	103	5	56,700	39,000	6,850	2,600
Clarion	76	8,114	443	6	38	12	.....	36,900	23,600	38,000	11,520
Crawford	379	35,750	2,798	11	243	131	.....	163,350	89,600	60,450	5,400
Erie	124	15,203	1,338	6	94	51	.....	66,950	41,450	18,400	2,600
Jefferson	133	15,927	503	0	24	4	2,783	95,550	31,350	21,750	12,288
Lawrence	13	1,301	145	1	39	7	20	8,450	5,750	1,500	.....
Mercer	252	23,688	1,515	6	212	92	177	56,500	36,250	2,500	5,250
Venango	115	12,686	1,742	5	79	59	.....	118,100	53,900	11,200	6,125
Warren	117	17,508	392	0	.....	.....	.....	20,250	15,000	2,750	.....
Totals	1,317	139,096	9,525†	47*	938	459	2,985	622,750	335,900	163,400	45,783

* All Refuges are maintained the entire year.

† All Safety Zones are erected prior to the beginning and dismantled after close of the Hunting Season.

OTHER LEASED AREAS—(Propagation Areas—Rabbit Farms, etc.)—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS

January 1, 1949 to December 31, 1953

NORTHWEST DIVISION

County	Food Strips						Seedlings		Forest Cuttings			Fruit Trees	
	Planted to		Seeded to	Maintained	Plots					Border Edge			
	Cleared Acres	Grains Acres	Clovers Acres	in Sod Acres	Purchased No.	Acres	Evergreens No.	Others No.	Release Acres	Width Ft.*	Length Ft.	Released No.	Pruned No.
Butler	....	....	....	19.0	47	20.5	3,200	6,000	9.0	20	1,000	12	....
Clarion [1]	....	2.0	....	18.4	19	5.4	11,600	43,300	26.0	....	....	....	....
Crawford	19.0	188.0	73.0	23.0	13	9.0	....	....	3.0	....	....	40	88
Erie	....	....	....	....	24	15.0	....	....	....	....	....	....	....
Forest [2]	118.5	240.0	106.0	162.0	6	4.3	8,880	8,771	160.0	35	33,518	5,352	4,804
Jefferson	0.9	....	....	17.5	11	1.6	15,250	15,100	5.0	25	4,325	....	....
Lawrence	....	....	....	....	5	0.4	....	....	....	....	....	....	....
Mercer	None												
Venango	....	....	....	....	9	4.3	....	....	....	....	....	....	....
Warren	None												
Totals	138.4	430.0	179.0	239.9	134	60.5	38,930	73,171	203.0	27*	38,843	5,404	4,892

* Average

Miscellaneous—[1] Seven trees grafted. [2] Constructed 3 Mile Road to Food Strips.

Note: In Forest County on the Allegheny National Forest, the crews also improved 4 spring seep areas and planted 8 bushels of water cress at 14 spring locations. Eleven small ponds or potholes were also created on the forest to improve conditions for waterfowl.



PGC Photo by Parlaman

Commission-owned tree planters are used in establishing living multiflora rose fences on Cooperative Farm Game Projects, Rabbit Farms, and other management areas. Blocks and strips of evergreen trees are also planted to provide food and cover for wildlife.

monly known as the Pymatuning Refuge, received many benefits from Federal Aid funds. This waterfowl refuge, located about one mile South of Linesville in Crawford County, was established in 1935 and contains 3,670 acres, of which 2,500 acres is water and marsh area. During the past five years almost 200 acres of fields near the shoreline were planted with farm crops, which were utilized by wild ducks, geese and upland game. Many other management practices were applied in an effort to make the area more attractive to all game species. A large number of the sportsmen and conservationists who visit this area each year to observe migratory waterfowl, do not fully realize the extensive restoration program necessary to retain and improve food and cover for wildlife on the refuge.

Land Use management plans have been prepared for many of the State Game Lands in Northwestern Pennsylvania. Proper use of the land is the backbone of modern conservation. The completed plans designate definite practices for agricultural areas, wildlife areas and forest land, all combined to provide the best habitat for game. Later issues will more fully illustrate and describe this detailed planning now being completed by project personnel.

Accompanying tables outline accomplishments on lands owned and leased by the Pennsylvania Game Commission in the Northwest Division. The various practices were partly financed with funds supplied under the Pittman-Robertson Act. The map of this portion of the state designates locations of these project areas. Food and cover for wildlife on the many sites were improved by the practices previously mentioned. In addition, Federal Aid funds partly financed construction and maintenance of access roads to various wildlife development areas, essential if improvements are to be retained over the years.

Other areas, not previously referred to, include propagation areas, auxiliary refuges and one archery preserve. The archery preserve deserves special mention since it is one of the two areas established in Pennsylvania, on which hunting with bows and arrows only is permitted. Archers

must purchase a special license to hunt within the preserve. Located on the Allegheny National Forest near Route No. 666, in the vicinity of Kellettville, this area accommodates many hunters annually, and benefits from wildlife restoration practices conducted on the preserve and surrounding forest and game lands.

Cooperative Farm Game Projects are located in nine of the ten counties in the Northwest Division. They are established in counties having the greatest agricultural development. Of the 200,951 acres now under agreement in the nine counties, 139,096 acres were leased with the aid of Pittman-Robertson funds.

This division contains two of the largest projects. Project No. 182 located in Venango County contains more than 23,000 acres.

More than thirteen hundred farms were added to the Cooperative Farm Game Program during the six years of operation with Pittman-Robertson funds in this division. The statewide program now consists of 10,383 farms containing 1,048,145 acres.

Technical assistance and advice were rendered to cooperators in establishing many conservation practices which are beneficial to wildlife. Cooperators were given 37,588 pounds of rye grass seed for planting in the last cultivation of corn. Over a million evergreen trees and Game Food producing shrubs were distributed to these farmers for planting on steep slopes and eroded areas retired from agriculture. Thousands of linear feet of woodland borders were improved by cutting overshadowing trees, thus stimulating low shrubby growth required for wildlife. Annual mowing, liming and fertilizing of narrow strips along field edges, near brushy fence rows has greatly increased the clover and succulent plants available for cottontail rabbits and game birds.

As in other areas of the state, requests for participation in this program far exceeds expansion possibilities. Game Commission policy does not permit further major expansion at this time, because available funds are being used to develop sound wildlife restoration practices on farms now in the program.

This is the third of a series of articles on each Commission division, reporting to the sportsmen and conservationists how Pittman-Robertson money has and is being spent in an effort to maintain and improve wildlife conditions. It is hoped that these articles tell what is being done, and where you as a sportsman can go personally and observe this management work.

More waterfowl—the result of careful planning and a sound restoration program.



The Road To Conservation Proper Land Use

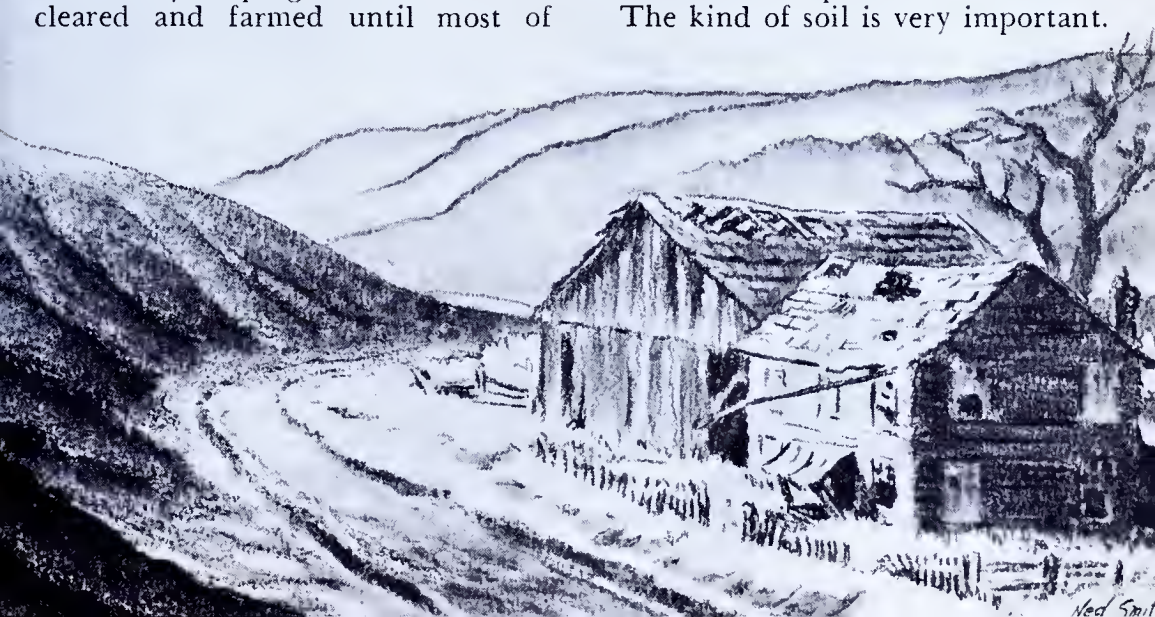
By Ivan McKeever

PROPER use of land has always presented a problem to man. Valuable areas of land resources have been destroyed in all ages and in all countries. Man's inability to understand clearly and completely what was happening was an important factor in causing land decline throughout practically all of the important agricultural areas of the world. It is true that farmers of the past were not entirely blind to proper land use. Many farmers showed good judgment and to some extent discovered, by trial and error, what could and what could not be done with land. Often, this trial and error system provided satisfactory solutions only after the land had been destroyed.

Those of us who have traveled throughout Pennsylvania and other states of the northeast have seen what can happen when land is not used within its capabilities. We have all seen many sloping fields that were cleared and farmed until most of the topsoil was lost and it was no longer economically feasible to continue farming operations. Many fields and farms, which once constituted about two million acres of profitable farmland in Pennsylvania, were abandoned. Today these acres are used for neither crops, pasture nor trees.

The scientific approach toward using land according to its capabilities is determined on the basis of a soil survey. The soil survey is nothing more than a physical inventory of the land. It shows the kind of soil, the amount of topsoil that has been lost, and the steepness of the slope. These factors are recorded on an aerial photograph. Farmers, soil conservationists and other professional agricultural workers are able to use these three factors in developing the criteria to be applied in preparing land capability maps. Each of these factors alone can often determine the capabilities of land.

The kind of soil is very important.



For example, some soils are rich and alluvial having been washed down and settled on the flat land from the rich soils in the hills. There are other rich soils, such as those built up in limestone areas, that are very fertile and will grow well almost any kind of crop. Then we find soils which are shallow. Some are shaly and droughty while others are very stony or wet. We can therefore easily conclude that the soil type alone is very important in determining land use.

The factor of slope is also very important. Today we think little of using land for crop production that is too steep for the successful operation of modern farm machinery. Also, land too steep for the successful use of farm machinery has quick runoff and erodes easily. This land must be used for purposes other than for the production of cultivated crops. Some of it can be used for pasture while other poorer or steeper parts should be used only for woodland.

The factor of erosion also may determine land use. All of us have seen lands that were once productive but, due to erosion, have become unsuited for rotated crops or pasture. A few eroded fields can still be rebuilt and used for cropland. Some can be improved and used successfully as grassland while others that have been eroded excessively cannot profitably be returned to the production of rotated crops or pasture. It is best to plant these areas to trees.

The proper use of the land, meaning the use of every acre within its capabilities, always provides for a system of farming that will insure permanent agriculture. Such a plan will usually provide for balanced farming with varied enterprises and different kinds of crops. These different kinds of crops make possible satisfactory crop rotations. This system of diversified farming is becoming more common in all sections of the United States and is especially prevalent throughout Pennsylvania. This kind of diversification makes possible rotations with row crops followed by small grains and hay mixtures. Other lands are devoted to pasture. The steeper, rougher, or more eroded areas are used for the production of woodland or improved for wildlife food and cover. The proper use of the land requires that we first of all determine what we have in the way of land resources and second, to make determinations as to how each acre can be used so that it will be conserved and improved.

After the land use has been decided, it is then necessary to determine the kind of conservation practices or measures that will be needed. Once we have determined that certain fields will be used for cropland it is then essential that we determine just what will be needed in the way of conservation practices to protect the soil from serious erosion. In making this determination we have to realize what causes the major soil losses. At this stage in planning we are forced to admit that our excessive soil losses are usually caused by heavy thunderstorms or torrential downpours when the land is unprotected by good grass cover.

To develop a satisfactory conservation plan we need therefore to consider first of all what is needed to protect the soil from these hard rains. This will require the planning of a water disposal system. By water disposal system we mean waterways, terraces, and diversions. Terraces and diversions constructed around the slope pick up the water before it has had a chance to do much damage and leads it around the hill on a gentle grade to a grass waterway. Sometimes it is necessary to plan and establish good grass waterways before the terraces or diversions can be installed. All of the diversions and terraces are designed and con-



SCS Photo

An aerial photo showing the land-use pattern on the Thomas P. Harney farm two miles west of West Chester. The trees, pond, hedge planting, strip cropping and stream in the foreground are helpful to wildlife.

structed so that it is easy to farm over them with modern machinery. The waterways are installed so that machinery can easily cross as it moves around the slope on the level. These waterways are taking the place of hard-to-cross gullies that plague farmers more and more as the machines get bigger and more difficult to handle.

After we have planned and established a water control system, we need to consider the additional practices that will conserve soil and water and build up the land. These practices will assist materially in holding the water where it falls and in preventing the loss of soil. One of the most important practices is strip cropping. By installing strips on the level each plow-furrow or cultivator mark becomes a miniature dam to catch and hold water. By having strips of grass between strips of rowcrops, the soil that is lost from the rowcrop strips is filtered out in the close-growing strip of grass below.

Good rotations are a must in conservation and soil building. Rotations are just a part of the diversified farming mentioned earlier in this article. Good rotations will include sufficient periods for the ground to be used for the production of grass legume mixtures. This grass may be harvested for either silage, hay or pasture. It is important to consider the proper kind of grass legume mixture, not only from the point of view of soil erosion control and soil building but from the point of view of the farmer's needs, giving due consideration to his livestock enterprise.

The conservation measures just outlined need to be supported by fertility measures. The proper use of lime and fertilizer is essential if we

are to have an adequate conservation program.

The treatment of the woodland is also an important phase of conservation farming. We know that woodland should not be overgrazed because overgrazing destroys reproduction and may pack the ground thus causing greater runoff. In planning, we will probably find areas on most farms that should be planted to trees or shrubs. These areas may need to be protected from grazing, depending upon the kind of trees and shrubs used. There may be areas, small in size, that are not suitable for either crops, pasture or trees and which should most logically be planted to shrubs that will provide for food and cover for wildlife.

Between the cropland and the woodland there is nearly always an area that does not produce satisfactory crops or grass. This is due to the shading by the trees and the competition by the tree roots for moisture and plant food. The borders between woods and open land provide excellent places for the planting of shrubs. These shrubs, if properly selected, will provide excellent food and cover for wildlife. All conservation practices should be considered if we are to provide for, "the use of each acre of agricultural land within its capabilities and the treatment of each acre of agricultural land in accordance with its needs for protection and improvement."

The readers of the Pennsylvania GAME NEWS are interested in how conservation programs affect wildlife. The plan we have outlined has dwelt on the theme of proper land use and with this kind of a program we will also be doing everything possible to encourage wildlife. Game technicians have discovered that the amount of wildlife is often directly related to the fertility of the land. The repro-

The P. E. Stansfield farm, Emmaus, Lehigh County. Here we see an outstanding view of proper land use backed up with conservation practices on the land. Note the home site with a beautiful farm pond to the right.

SCS Photo





SCS Photo

The farm of Howard Perry in York County portrays a good land use pattern. Mr. Perry has been a cooperator with his soil conservation district since 1937 and is chairman of the district board of directors. The pattern of conservation here also shows that his neighbors are conservationists.

duction, the growth and quantity of wildlife is usually in direct proportion to the fertility of the land and the conservation program on the land.

All of the land use proposals and conservation practices outlined in this article are recognized as improving the habitat for wildlife by providing better food and cover. The waterways, so essential in soil and water conservation programs, provide travel lanes and cover for both birds and mammals. The diversion terraces and filter strips with their permanent cover of grass and legumes provide the same kind of travel lanes and include also the additional possibilities for food.

Wildlife of all kinds does much better where it has a variety of cover conditions. The biologist and the hunter both recognize this important factor in wildlife management. A good conservation plan fills the requirements by providing a great variety of cover and food. We have strip cropping with its many edges. The strips of grass border strips of row crops. Strips of oats or wheat border strips of grass. Cropland or grassland join the woodland with a nice shrub border in between. The wasteland or odd areas are planted to provide protection to the soil while at the same time the plants that are selected improve the habitat of the ringnecks, the quail, the grouse and the rabbit, as well as the song bird. The protection of woodland from grazing is also a good wildlife practice. The planting of the rougher, more eroded, areas to trees does much to improve conditions for wildlife.

Some farmers often wonder about the desirability of making conditions too favorable for wildlife. Sometimes

of course there are unpleasant experiences with the hunter. Sometimes too there is damage to crops, especially at certain times of the year, from wildlife. Most farmers, however, like ringneck pheasants even though there are times when they are mad enough to "ring their necks." This is because of the damage they may have done to the newly sprouted grain. In spite of temporary criticism, adequate wildlife on the farm is welcomed by most farmers. They know, for example, that insectivorous birds do more than all the sprays combined to keep injurious insects under control.

In planning for proper land use and good conservation, we should not forget the farm pond which is usually just a part of good land use and is good insurance against drought. These ponds provide a sort of center of activity for wildlife. They are also very beneficial for spray and irrigation water as well as being appreciated for such recreations as fishing, skating, and swimming.

In using the title and theme "Proper Land Use" for this article there has been no intention to infer that proper land use, as the term is ordinarily used, is all there is to conservation farming. True conservation farming is also more than the application of conservation practices here and there. It is more than a few meetings on conservation. It is more than just handing out bulletins on conservation. It is more than soil surveys. It is certainly more than just a conservation farm plan. True conservation farming is, "the use of each acre of agricultural land within its capabilities and the treatment of each acre of agricultural land in accordance with its needs for protection and improvement."

In conclusion, we could well raise the question as to whether or not we will be able to work fast enough to avoid the serious conditions that have developed in the past in other fertile areas of the world. Can we organize and carry out a coordinated conservation program that will save our valuable topsoil so necessary for our type of civilization? In trying to answer this question we will have to recognize that there are still certain elements in our society which are not yet sufficiently aroused to the need for more and better conservation. Then too there are some who think we can correct the downward trend of production by using more lime and fertilizer. Perhaps we can do this for a while but can we indefinitely? Certainly we have a challenging job ahead of us.

. . . *The End*

Spring Burning Damages and Endangers

With the possibility the spring fire season may come early this year, the Game Commission appeals to landowners to refrain from burning off fields and woodlots. Leading agriculturists say the custom is unnecessary, that it damages soil fertility. Game officials point out that aside from the dangers that accompany burn-offs ground fires have a disastrous affect on wildlife during the nesting season, and they destroy needed cover.

Fires that get out of control, especially those near woodland areas, often become awesome conflagrations. They may burn over great acreages of good timberland, destroying many wild creatures and their homes, even buildings of the landowner who started them.



Introducing . . .

A NEW COLUMN FOR YOUNG CONSERVATIONISTS

GAME NEWS takes great pleasure in presenting a new column especially written for our younger readers—for kids of all ages. Written with the help and advice of Ted. S. Pettit, Conservation Director of the Boy Scouts of America, this special section of each issue will tell you what to do for conservation and how to do it. OUTDOOR FUN WITH A FUTURE will be of unusual interest to Scouts, Future Farmers, 4-H Club members, Junior Sportsmen, and all others interested in wildlife and resource conservation. But, more important, this column takes a brand new approach to conservation education and opens unlimited opportunities for every youngster to do something for the cause. Here's why . . .

Every project or activity discussed in this column

. . . will be fun to do

. . . . . can be done by any youngster, either alone or as a member of a group

. . . . . will not require a large amount of expensive equipment or materials

. . . . . can be done anyplace where there is at least a small patch of "outdoors"

. . . . . if carried to completion, will benefit wildlife, improve human behavior, or otherwise will be an asset to conservation.

Strictly for the Birds

LATE April and May is probably the most exciting time of year to watch birds. It is also the best time to start finding out something about them and how they live. But maybe you don't agree. Perhaps you think that October, November or December, when you watch ducks, geese, quail or grouse across the sights of "old Betsy" is the best time of year for birds. We'll agree that's a pretty exciting time, too. Many a "timber-

doodle," "partridge" or bluebill we've watched that way and each one it seems, provides a bigger thrill than the last one.

But for beauty in color and song, and interest in watching wild birds at home, no time is better than spring. It's during the nesting season that bird plumage is at its best—when the cardinal seems the reddest; the oriole and tanager the most brilliant. It's during the spring that the grouse seems to drum the loudest; when the woodcock sings in flight; and all birds from tiny wrens to turkey gobblers tune up their voices til the woods, fields and marshes are filled with song.

It's the number and variety you see in the spring that make this the best time of year to watch birds. Whether you know their names or not, there's a lot you can find out about them just by looking—and a lot you can learn that will help you be more successful next fall when your 410 or 20 gauge shotgun replaces your field glasses or binoculars.

Field glasses or binoculars? Yes, you'll have much more fun watching birds if you can beg, borrow, or otherwise get hold of a good pair of glasses. A good bird guide will be helpful too, such as A FIELD GUIDE TO BIRDS, by Roger T. Peterson; or AUDUBON BIRD GUIDE, by Richard H. Pough. Be sure to take along a notebook and pencil on your trips so you can make notes on what you see.

One of the first things you'll notice is that some birds will be the same ones that have been around all winter. Such birds as downy woodpeckers, chickadees, bluejays, cardinals, crows, sparrow hawks, night herons, bobwhite or grouse may be nesting near your home. They may not be the same individual birds you've seen during the winter but they will be the same species. There are many kinds of birds that live year round right in your neighborhood. These birds might be called permanent residents.

Then you'll see another group of birds that spent the winter in the south and came north to nest and raise their young in your area. When fall comes these birds will again fly south. In this group of summer residents are robins, bluebirds, wood thrushes, swallows, whippoor-wills, brown thrashers, buzzards, some of the hawks, meadowlarks, cowbirds, a few warblers and others.

Next, you'll find a group of birds that are only passing through on their way further north. They have spent the winter far to the south, some as far perhaps as South America, and they nest far to the north, some even on the tundra of the Arctic. They would include some of the birds you see along the water—the sandpipers or plovers, loons, ducks and geese; some of the sparrows and finches; some of the thrushes and many of the warblers. These birds might be called spring migrants.

Your field guide to birds will help you find out quickly in which group the birds belong. Look under the heading "Range" under the description of the birds you see.

Another thing you'll soon discover is that different birds prefer different kinds of places to live. In fact, some bird names give you a clue to where you'll find them. Where, for example, would you expect to find a woodpecker, sandpiper, meadowlark, barn swallow, cliff swallow, chimney swift, barn owl, alder flycatcher or "fish hawk?" Each of those names suggests the kind of a place the bird prefers to live—woods, beach or marsh, field or meadow, sand or clay cliff, near buildings, in an alder thicket or near water. All birds have definite kinds of places where they live, based on the kind of plants that grow there. With a little experience you'll be able to look at an area and predict with reasonable accuracy what kind of birds you'll find.

At the same time you'll find out something else that's interesting and something that will give you a clue to some conservation projects that will help wildlife by giving them a better place to live.

You will soon discover that more birds live in a place where two or more natural areas come together than in the middle of either of the natural areas alone. For example, look along the *edge* of a woods, where a meadow and a woods meet. Look around the edge of a marsh where the marsh touches the upland. Look in a hedgerow or shrubbery fencerow that cuts across a pasture or field. In these "edges" generally, there will be a larger variety of plants than in either of the areas that come together there. The plants in the edges are those that need more sunlight than they get in the dense woods; which would be cut out of a field or meadow; or which couldn't grow the wet soil of a marsh. They are plants such as elderberry, blackberry, sumac, wild cherry, hawthorne or catbrier, which supply food and dense cover required by birds for shelter from their enemies and for nesting.

Taking a hint from what you've found, there's one good way to help wildlife, and give more birds a place to find food and shelter. You do this by making a place where many different plants will get started, where they don't grow now. You can build a brush pile that in a very few years will become an excellent place for birds. Here's how to start:

First you'll need some brush. Trimmings left when fruit trees are pruned; the branches of trees cut in a logging operation; small saplings or brush cut as part of a woodlot thinning all are good. If you cannot find such brush, perhaps you can cut some just for a brushpile. Get the help of your District Forester or Game Protector and see if there is a place where you may trim

This young vireo is about ready to leave the nest. His brothers and sisters have already taken wing. Note the bits of yarn, string, and other soft material that the mother vireo used in building this nest.

Photo by Lynwood M. Chace



out some brush. Perhaps your highway department knows of a back country road where the roadside needs trimming out. At any rate, you shouldn't have too much trouble finding enough brush.

Next, select a place for the pile. The best kind of spot would be in or close to a hedgerow, or in the edge of a woods. Then animals will have cover and a runway to get to the brushpile.

The pile should be at least six feet high and twelve to fifteen feet across to be most effective. The brush should be piled loosely and weighted down on top with large, heavy branches so it will not blow over. Try to find a stump, stone wall, large rock, or fencepost as a base for the brushpile—something that will hold it off the ground so it does not pack down solid.

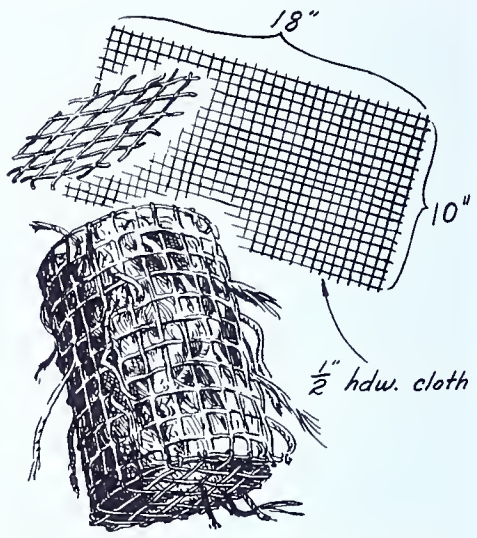
If there isn't anything suitable where you decide to build the pile, drive three sturdy stakes in the ground in a triangle. Or cut a sapling half way through about four feet above the ground and push the top over.

Stack the brush against, over and around the support, criss-cross fashion so that the pile is loose with plenty of holes running down through to the ground.

Song birds will perch in the brush and some may nest in it. Their droppings will carry the seeds of such plants as cherry, blackberry, elderberry or grape, which will sprout and grow up through the pile of brush. In a year or two there will be a tangle that will shelter rabbtits as well as birds.

If your activities are limited to your backyard or the park in town, there are still things you can do that are fun and which help you find out more about birds.

First, try putting out short pieces of string and brightly colored yarn where birds can find it and use it in nest building. Either hang the



NESTING-MATERIAL RACK

yarn and string on a fence, or on the branch of tree, or make a special container for it. Such birds as orioles and robins will use it to weave into their nests.

One good way to make a rack for the nesting material is to bend a piece of half inch mesh wire hardware cloth ten inches wide and a foot and half long into a tube. Make a top and bottom for the tube out of more hardware cloth, and fill the tube with yarn and string so that the ends stick out through the spaces in the wire. Fasten the top and bottom to the tube with wire, and hang the container in a tree where birds may find it.

Watch robins and orioles, and even English sparrows as they pick out the material and take it to their nests. If you are lucky, you can watch them weave it into their nests. After the nesting season is over, late in the summer or early fall, collect the old nests and you may be able to see how the birds pushed the string and yarn in with grass and other material to weave a nest.

Almost every spring, newspapers print stories about "crazy, mixed up"

robins. The stories tell in detail how someone saw a robin flying and pecking at a shiny hub cap on a car or at a shiny window pane. The writers make a big joke of the crazy robins. But what the newspaper writer does not know is that the robin is doing just what the writer would do too if he found someone breaking into his home at night to menace his wife and kids. The robin is protecting his home.

Robins and other birds too, "stake out" territories around their nests and instinctively drive other robins out their "backyard." The robin sees his reflection in the hub cap or window pane and thinks it's another robin. He tries to drive it away.

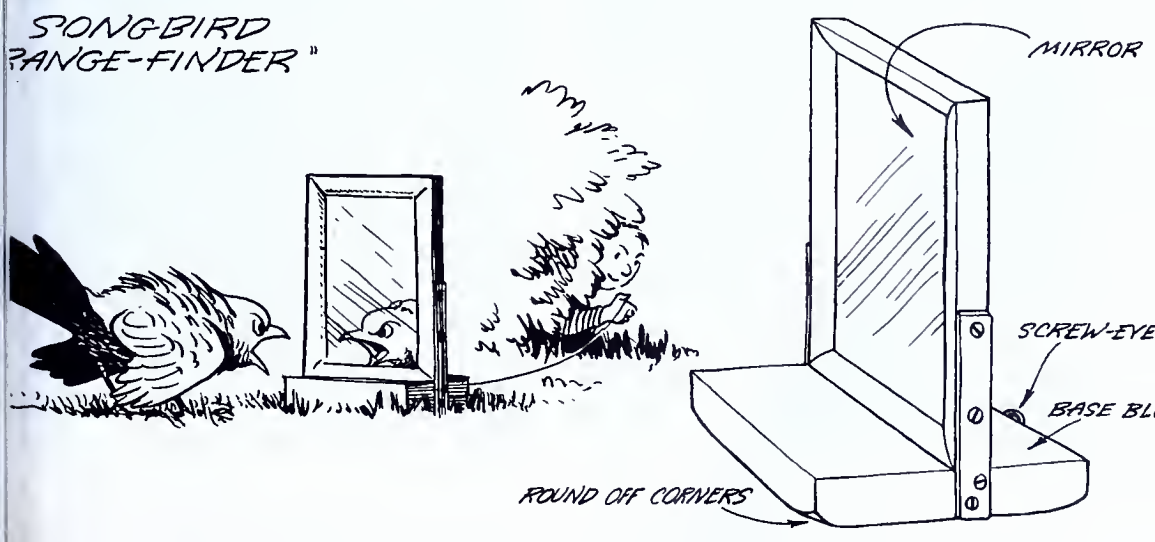
Knowing about this instinct, you may be able to find the rough boundaries of the territory of robins that nest in your yard or in the park. Like the old recipe for rabbit stew that reads "First, take one rabbit," you'll first have to find one robin nest, with robins in it.

Then fasten an inexpensive dime-store mirror to a thick piece of wood, so that the mirror stands upright on the ground and the wood acts as a base to keep it from toppling over. Fasten a long piece of string to the wood so you can stand back quite a ways and pull the mirror back toward you.

Police the mirror on the ground where you see a robin feeding or stalking worms near his nest. When he sees the mirror and starts to attack it, pull the mirror back a foot or two. If the robin keeps on attacking, pull the mirror back a foot or two more. Keep it up til the robin loses interest. Then try the stunt again, except gradually move the mirror in a different direction. Try it a third, fourth and fifth time, each in a different direction. Robins don't always have rectangular "yards" the way we do. Frequently their territories may have many sides, or even seem to be round. If you are lucky and have plenty of space in which to work, you'll be able to see reasonably well the "property line" of the robin's territory. Then if your newspaper runs a story about crazy robins you can tell the editor it isn't as funny as he thinks, and you can prove your story with a pencil sketch map.

As you watch birds this spring, don't be satisfied with just learning their names. That's fun for a while, but soon may get pretty dull. Try to find out how birds live, where they live, where they nest, what they eat and other interesting things about them. It's a lot more fun, and maybe you'll discover something that no one else found out before.

. . . *The End*





Last Winter's Rabbit Catch Set A Record

The rabbit box trapping program carried on last winter by game protectors, paid trappers and cooperating sportsmen netted almost 59,000 cottontails. This was an all-time high for the endeavor in Pennsylvania. The largest previous catch, made in the winter of 1951-52, was about 1000 bunnies less, or nearly 58,000. In the winter of '52-'53 the box take was close to 53,000.

There was an unusual feature to last winter's accomplishment. Except in cases where damage complaints necessitated a longer period the trapping time was reduced to one month —in most cases, January. Formerly, the catching time consumed 3 to 3½ winter months.

The Game Commission tried the one-month plan last winter in the hope it would reduce expenditures without lessening the effectiveness of the program. The catch proved the shorter, more intensified effort accomplished the desired results. Moreover, the saving in wages, travel expense and other charges incidental to the program reduced the cost about 30 cents per trapped rabbit.

The live-trapping is done in cities, parks, cemeteries and other places closed to hunting, where the rabbits cause damage to plant life but may not be hunted. Cottontails so caught are released in gunning territory. They are considered the best brood stock obtainable for repopulating areas where hunters may pursue their sport.

Hungarian Partridges Stocked in Western Pennsylvania

A sporting good will project is in effect between the Department of Lands and Forests of the Province of Ontario and the Pennsylvania Game Commission. Pennsylvania is trading surplus wild turkey eggs for southern Canada Hungarian partridges.

The first shipment of 50 (25 pairs) of the Huns was received the last week in February. The game birds were wild trapped in the region north of the Thousand Islands and were liberated in Crawford County.

The Game Commission anticipates receiving additional birds before long, dependent on necessary trapping conditions in the area from which the birds will come. The Commission plans to release later shipments of Huns in Erie and Mercer Counties, also.

Hungarion partridges have not been stocked in this state for several years because the birds obtainable in the past did not propagate successfully here. But it is hoped the Canadian-raised birds will become established where others of the same species failed. The wild trapped Huns we are receiving from our neighbor on the north are of a different strain than those formerly introduced; they are apparently adapted to life on small farms. The reason why the northwestern Pennsylvania counties were chosen for the new test is that they have similar habitat and climate to that of southeastern Ontario.

Pennsylvania Second in Hunting License Sales

Recently, the U. S. Fish and Wildlife Service published the names of the ten states ranking at the top in number of hunting license sales during the twelve-month period ending June 30, 1953.

Michigan took first place in the Nation with hunting license sales of 1,166,720; Pennsylvania ran a close second with 1,095,266.

Commissioner Leffler Named To Important Government Committee

Between April 15th and June first a special committee will survey the organization and operating procedures of the U. S. Fish and Wildlife Service. Announcement of the official inspection and study was made recently by Douglas McKay, Secretary of the Interior. In general, this survey was instituted to provide ways and means of modernizing the Fish and Wildlife Service and to make its administration as effective and efficient as possible.

This committee consists of: Ross L. Leffler, of Pittsburgh, a member of the Pennsylvania Game Commission and an official of the United States Steel Company; James Turnbull, vice-president of Monsanto Chemical Company's western division; and John D. Pennekamp, associate editor of the Miami Herald. John D. Bennett, assistant director of the technical review staff of the Fish and Wildlife Service, and M. George Goodrick, division of management research, will assist in the survey.

Secretary McKay says particular study will be given the organizational structure and responsibilities, in Washington and the field. The Service's policies and procedures and its functions and responsibilities throughout will be studied. The public relations of the Service and relations within the Department of Interior and with other Federal agencies will receive scrutiny.



THOMAS A. MOSIER
August 15, 1886-April 2, 1954

Thomas A. Mosier has gone to rest in his last long sleep in a hillside cemetery overlooking the valley of the Bald Eagle stream, Centre County, Pennsylvania, where he loved to fish and swap yarns with his friends about the BIG ONES that got away.

During his years of service as a district game protector for the Pennsylvania Game Commission, from 1921 to 1951, Tom set an example of loyalty and love for his work. The episodes of his many and varied experiences—often related to his fellow-workers—were inimitably portrayed in a style so fitting with the narrator and the surroundings involved. . . .

Thomas A. Mosier retired honorably from the service, leaving his heart with us. His love for his work and his friendship for his compatriots cannot be replaced. The spirit of him in his Eternal Rest, we shall hope, may carry forward in the ranks of those who follow in the work of conserving our wildlife and natural resources forever.

. . . M. E. SHERMAN, Supervisor
Northcentral Division



Bears On The Move

The greatest bear yield in point of square miles remains in a few of the northcentral counties of the state. But a study of recent-year bear kills in Pennsylvania shows these popular game animals have spread east, west and southward considerably. Last fall the dispersal was unusually widespread because of a natural food shortage.

The take of bears in some of the eastern counties has risen quite steadily in the last few years. Pike, Lackawanna and Monroe are now classed with the leaders. Also, several counties long considered outside the true "bear country" made a most creditable showing in the last season, low though the over-all kill was. Leading this catagory was Clearfield County. Others thought to be too far south to be in the bear range were: Clarion, Huntingdon, Indiana, and Mifflin Counties.

Weights given by hunters on kill tags indicate the largest bear bagged in the 1953 season was a 430 pound male taken in Forest County. One listed at 423 pounds was bagged in Cameron County. Two bears, a 410 and 406 pounder, were taken in Elk County.

Commission Director Receives High Honor

For superior service rendered to the U. S. Fish & Wildlife Service program of wildlife research and management, Dr. Logan J. Bennett, the Game Commission's new Executive Director, has been granted the Department of Interior's Meritorious Service Award.

The citation accompanying the award was received from John L. Farley, Director of the U. S. Fish & Wildlife Service, and was signed by Douglas McKay, Secretary of the Interior. The high honor granted Bennett resulted from his more than 18 years of superior service in Federal Government, including more than two years of military service.

Dr. Bennett began his career as a wildlife technician for the old Biological Survey in Wisconsin on July 1, 1935. Two months later he was selected to lead the Cooperative Wildlife Research Unit at Iowa State College, the first unit of its kind in the country. In March 1938, because of his outstanding work in research and student training, Dr. Bennett was designated to head the Cooperative Unit at Pennsylvania State College. He entered the Navy in July, 1943 and served as an officer in the South Pacific until December, 1945, when he returned to the college. On December 1, 1947, Dr. Bennett was made Chief of the Section of Cooperative Wildlife Research Units in the Washington office and less than a year later became Chief of the Branch of Wildlife Research, the position he held when he resigned to become Executive Director of the Pennsylvania Game Commission.





The Conservation Class of Somerset High School. Class teacher Bob Reed is shown kneeling in center of group.

Somerset Students Show The Way

Nineteen students of the Somerset High School's conservation class recently added extra proof to the old saying that "youth will show the way." The story began last fall prior to the regular hunting season when the Game Commission sent out a call to its field officers and the hunters of the state, requesting them to aid in collecting deer jaws and grouse feathers. From these, wildlife research biologists can determine the condition and population level of the Commonwealth's grouse and deer. A GAME NEWS notice provided the spark and the students, under the direction of their instructor, Robert Reed, went to work to find the fuel.

By the end of the grouse season there was flame on the conservation horizon—wings and tail feathers from 34 grouse. This was just a starter for by the end of the 1953 "buck" season, the class had collected 60 deer jaws. By the time the "doe days" were over, the number of deer jaws soared to a total of 84. Most of the grouse feathers and deer jaws came from successful Somerset County hunters. And it was a young lady, Elva Zarefoss, who led the class in their conservation effort with a total of 17 deer jaws. Considering that only 300 deer jaws were sent in from the entire state, the 84 submitted by these Somerset High students comprised about twenty-two percent of the total.

Life is just one uniform after another for Nick Ruha, Land Utilization Assistant for the Game Commission at Forty Fort and Captain in Reserve Air Police detachment at Pittsburgh. Ruha formerly lived in Ligonier but was transferred to the northeast in 1952. Since then Ruha estimates he has driven 13,000 miles—just to take week-end training two days per month.

Pittsburgh Sun-Telegraph Photo by Morgan



Izaak Walton League Sponsors Young Outdoor Americans Conference

For probably the first time in history, a national conference of young people from all 48 states, representing youth organizations having a direct interest in resource conservation, has been held. The Young Outdoor Americans conference, sponsored by the Izaak Walton League, was held in Chicago during the League's 1954 convention March 10-13.

Approximately 75 youngsters of late 'teen age, drawn from the 4-H clubs, Future Farmers of America, Boy Scouts of America, Girl Scouts, and some purely state and local groups gathered in the Windy City as guests of the League. These boys and girls were chosen in state conferences conducted by Governors' committees.

In Pennsylvania the Governors' Committee, headed by C. W. Stoddart, Jr., of State College, included: A. L. Baker, of Pennsylvania State University; Mrs. Ellen Dietrich, Upper Darby; Robert Yake, East Lansdowne, chairman of the Pennsylvania Federation's conservation education committee; Clarence Urffer, Regional Scout Executive, of Philadelphia; Dr. Elmer B. Cottrell; and H. C. Fetterolf, Chief of Agricultural Education, Pennsylvania Department of Public Instruction.

The Pennsylvania delegate, selected by his fellow delegates at a meeting in Harrisburg on February 23rd, was Robert Worley, of R.D., Mercer. Worley is President of the Keystone Chapter, Future Farmers of America.

Governor's Committee chairman Charles Stoddart congratulates Bob Worley, Pennsylvania delegate to the Young Outdoor Americans Conference. H. C. Fetterholf, advisor to the Future Farmers, and Bob Weilacher, of Brockway, look on. Weilacher was honored by selection as alternate delegate.



The "Old Town Turkey Feeder"

Here is a rotary type game feeder which was devised and constructed by the Old Town Sportsmen's Association, of Clearfield. Although these feeders are not new in design (many other clubs throughout Pennsylvania having used similar feeders for many years), the Clearfield County club has had exceptional success with the 40 they have placed throughout the county this past winter. According to Secretary M. B. Hartsock, 4 North 5th Street, Clearfield, the club purchased 100 bushels of ear corn this year to supplement the 50 bushels received from Game Commission supplies. Present club membership is over the 500 mark.



The rotary type wild turkey feeder being filled with ear corn by members of the Old Town Sportsmen's Club.

Experiments with the rotary game feeder began in November and December of 1951 by the Club's game feeding committee—Harold "Bud" Shaffner and Harold "Buck" Dunlap. At a director's meeting held January 10, 1952, the Club officially adopted these feeders as the most practical method of winter game feeding. They authorized the committee to purchase the necessary wire and reimburse the committee for expenses incurred while experimenting with various type feeders.

The end pieces of this "official" feeder are taken from wooden spools or drums on which wire or cable is stored or transported. A wooden core is held in place between the two end discs by bolts. These bolts are removed to free the end pieces, the only parts of the spools used in making the feeder. Large holes have already been drilled through the center of the end pieces. Turkey wire with a one by two inch mesh and three feet wide is used as the covering. The average amount of wire needed is 7½ feet, which allows for an overlap. The diameter of the spool ends most easily handled is from two to 2½ feet. After the end discs have been removed from the spool, it takes one man 15 minutes to assemble the feeder. The overlapping wire is not stapled but is wired shut after the ear corn has been placed in the feeder. Of course, the corn is not put into the feeder until it is mounted and ready for use.

When a spot has been selected for the feeder, a pole is cut that will be used to support it. The holes in the end pieces are usually 3 inches in diameter and the pole used must be loose enough to allow the feeder to revolve freely. The feeder pole is then supported by wiring it to two trees so that the bottom of the feeder is 2 feet above the ground. Depending on the size of the end pieces, the capacity of this type feeder will be from four to six bushels of ear corn. Primarily used as a feeder for wild turkeys and squirrels, club members have found evidence that deer sometimes paw at it, turning it on its axis in an effort to get the corn. To protect the feeder from snow and ice, a thatched shelter or roof is usually built over or above (but never around) the feeder. All sides are left open.

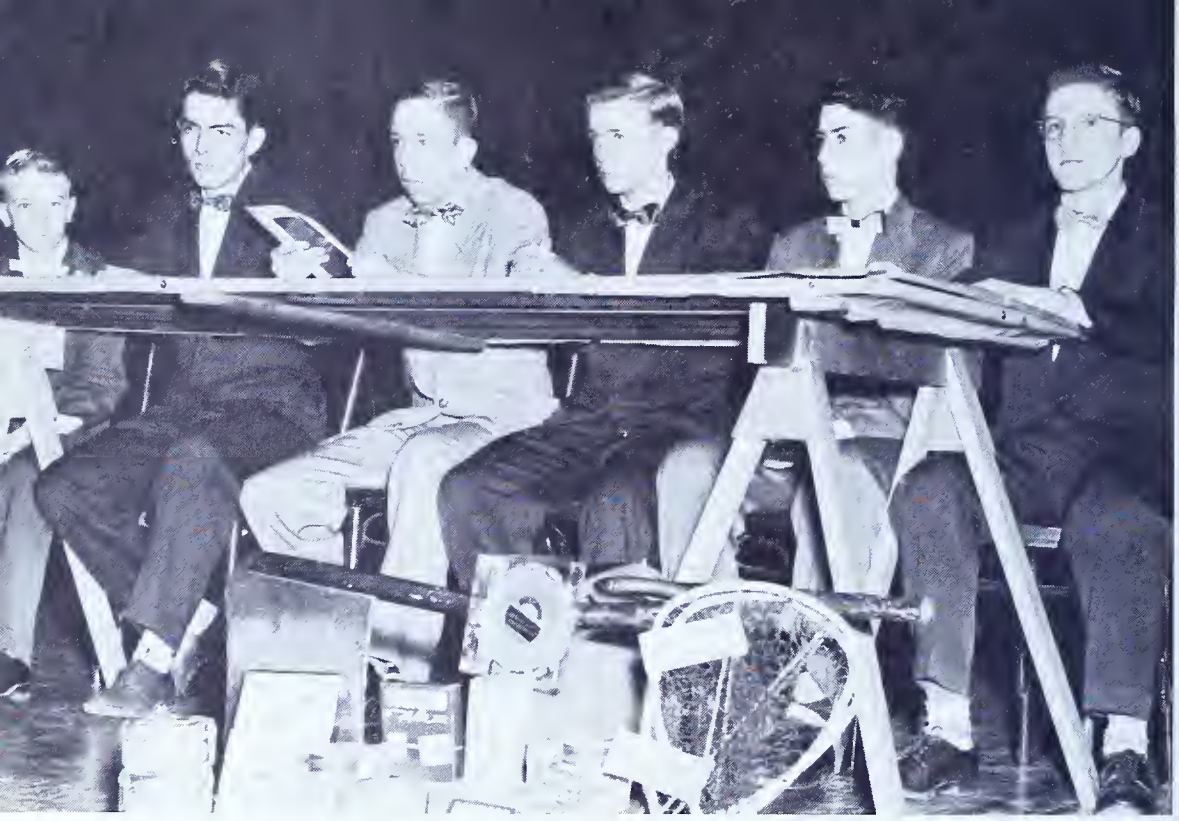


Photo by C. Paul Blair

Highlighting the Pennsylvania Federation of Sportsmen's Clubs spring meeting in Harrisburg was this panel of Junior Conservationists from Johnstown. Left to right, Ralph Mastoller, Edward Strayer, Robert Knudson, James Hockensmith, George Walter, and Paul Roshon.

Sportsmen's Federation Announces Plans for 1954 Junior Conservation Camp

Plans for the 7th Annual Junior Conservation Camp, sponsored by the Pennsylvania Federation of Sportsmen's Clubs, have been announced by Chairman C. W. Stoddart, Jr., of State College. One of the most outstanding opportunities of its kind for youth, the camp was started in 1948 when 36 boys from six counties of the Commonwealth attended for one week. The 1954 camp will provide facilities for 160 boys from every section of the state and will be located at the Forestry Camp of the Pennsylvania State University. This camp is situated 15 miles south and west of State College and provides comfortable quarters and facilities at a minimum cost.

Under the sponsorship of the eight divisions of the Federation, freshmen or sophomore boys in high school during the current term are being selected for enrollment in this unique outdoor experience. The enrollment fee is $36.00 for the camping period and the sponsoring club is also responsible for transportation of the boy to and from camp. All applications for enrollment must reach Mr. Stoddart no later than May 15th. Division dates and quotas are as follow:

South Central Division
18 boys June 13-June 25
North Central Division
18 boys June 13-June 25
Southeast Division
20 boys June 25-July 8
Central Division
22 boys June 25-July 8
Northwest Division
20 boys July 11-July 23
Southwest Division
20 boys July 11-July 23
Northeast Division
20 boys July 23-August 5
Southern Division
22 boys July 23-August 5

———

Award Program Announced To Recognize Boy Scout Conservation Efforts

The United States Department of Agriculture and Interior in cooperation with the Boy Scouts of America will make individual and unit awards to Boy Scouts who participate in the Boy Scout good turn conservation program for 1954, which began officially on March 21.

Twelve scouts who make outstanding contributions to the program will be selected to receive certificates of National Conservation Achievement. The certificates will be presented to the scouts by President Eisenhower when they report to him during Boy Scout Week in 1955. President Eisenhower, a member of the Boy Scout Executive Board, suggested the conservation effort to the scouts.

All units actively participating in the good turn program will receive a certificate signed by the Secretary of the Interior and the Secretary of Agriculture.

The programs carried on by individuals or units may include such projects as building a farm pond, planting trees, seeding highway embankments, cleaning up litter in a public park, planning an exhibit or showing movies to stimulate interest in conservation.

Helping the Cub Scouts, Boy Scouts and Explorer Scouts set up their program are the Forest Service, Soil Conservation Service, and Extension Service in the Department of Agriculture, National Park Service, Bureau of Indian Affairs, Reclamation Service, Geological Survey, Fish and Wildlife Service, Bureau of Mines, and Bureau of Land Management in the Department of the Interior.

Field personnel of all these agencies are ready to help boys and units select a worthwhile project in their locality and to give technical assistance in carrying it out.

Photo by C. Paul Blair

Officers and panel members who discussed outdoor writing at the annual spring dinner meeting of the Pennsylvania Outdoor Writers Association in Harrisburg were, first row, left to right: Will Johns, Editor; Bill Wolf, nationally known outdoor writer; Jack Richards, POWA president. Standing: Shorty Manning, POWA secretary; Charles Nehf, Federation Secretary and panel moderator; Dr. Allan Grove, POWA vice-pres.; Phil Sharpe, NRA staff member; and Bob Reed, Game Commission Director of Public Relations.



The Best Rifle

By Ed Shearer

A lifetime of experience with some 500 assorted guns continual experimenting and study has convinced me of one fact. The best gun, like the best bird dog, exists chiefly in the imagination of its owner. The writer is not connected with any manufacturer in any way; neither does he favor one over another. In addition, the Game Commission and this magazine does not and will not endorse any commercial product. But, within these limits, we will do our best to give our readers the type of information they want in this column without making any recommendations or endorsements of any specific product.

Most novices and inexperienced gunners fondly believe that any good rifle will put its shots all in one hole and shoot from here to there on a straight line. This type of thinking has largely been caused by the tremendous increase in number of ammunition handloaders in the past few years. At work or in the sporting goods store there is always one or two of this clan present. They talk in terms of groups, each going the other a shade better but never admitting a spread of more than an inch at 100 yards or more.

After listening to such talk, the average rifleman gets either of two ideas, both erroneous. First, any rifle he fancies will automatically shoot one inch groups at 100 yards, and, secondly, a rifle has to shoot one inch groups at this range or it is a poor piece. So our friend buys or takes the rifle he already has, proceeds to find some sequestered nook with a convenient rest of some kind, loses several shots, inspects his target, and is scandalized. His group has not only used up the magic inch but several of them as well. He is sad at heart.



What he fails to realize is this: Transfer his group to a buck's shoulder and he would be telling the gang in camp how he "slew him" to the accompanying sounds of sizzling venison steaks. The hunter should keep in mind that it does not require one minute of angle accuracy to reduce a 12 inch or more aiming circle on a big deer to venison steaks.

Minute of angle shooting is not in the realm of metallic hunting sights or even in the low-power hunting scopes with their coarse posts or cross hairs. In fact, if you see a hunter doing minute of angle shooting in the normal Pennsylvania woods hunting, take a good look at him—he's a rare bird.

Another fallacy prevalent among a great many hunters is that a given cartridge will perform with the same results in all types of rifles. Their great argument is that a 30-06, for example, will shoot just as far in a lever action as it will in a bolt action. Thus, if it shoots as far, it will kill as far (as any fool knows). It sounds reasonable to the tyro but they have yet to learn (in the words of a famous grouse hunter), "It ain't what you throw at 'em; but what you hit 'em with."

I learned this a great many years ago when I bought a 95 model Winchester carbine shooting the 30-06 cartridge. Long Range Casey was shooting possibles at 1000 yards with the 30-06 cartridge and I could see no good reason why I couldn't "bust a buck" to at least 500 yards. The first season I used this rifle I killed a large buck at 376 paces with one shot that landed in the center of the chest. My faith in that rifle was vindicated in one fell swoop. A couple of years later I had an opportunity to shoot this rifle on a military range at 200 yards with sand bag rest. On inspecting the group I began to believe in miracles. It certainly would have taken one to have hit a deer at much over 200 yards. Nevertheless this was a fine little rifle and I used it for some time afterward with perfect satisfaction.

Another case: Last fall two brothers, both good deer hunters, bought two rifles chambered for the 300 Savage cartridge, one a lever action and the other a bolt action. The one that bought the lever action brought it up to me and wanted to know what was the matter with it. Claimed it shot twice the size group that his brother's 300 did. I pointed out that nothing was the matter and the rifle was shooting very good. Plenty good to take care of any hunting shot that he would be likely to get. But it was not designed to drive tacks at 100 yards.

In analyzing these questions, I believe the hunter in most cases has his mind already made up as to the cartridge he wants. He may favor a certain rifle but it is not paramount. For instance if the rifle were chambered for the obsolete 44/40 caliber, he would not take it as a gift. Where the average hunter makes his error is in trying to put the cartridge and rifle together with no clear idea in his mind as to the conditions under which he is going to use it. Also just how wide a latitude of game or other uses does he want the combination to take care of? On the contrary he has a vague idea that a good rifle will do everything from shooting gnats to doubling as a crutch.

So in selecting that mythical best rifle for YOU the first step is to select the cartridge. Then consider the capabilities of the different types of rifles that are chambered for it. Each type of action has its advantages under certain conditions as well as limitations. For simplicity we discuss on those being manufactured commercially at the present time.

In big game rifles in the East at least, the lever action is the choice of majority of the hunters. As a large game rifle this type has several advantages. The action is available in short, light, fast handling rifles. They are well balanced, good-pointing rifles as a rule. They have speed of fire and in the case of wounded game that could be dangerous, the side-gate type can be reloaded with the hammer at full cock ready to use. They are available in both hammer and hammerless types and tubular, box and rotary magazines. Due to the method of locking their breech blocks and comparative generous chamber tolerances necessary to eliminate feeding and extraction cartridge troubles, they will not deliver the fine accuracy of the bolt action type. This rules them out as long range or minute of angle rifles, no matter what cartridge they are chambered for.

If you are a handloader, you will have to resize the fired cases. If you do not have a heavy bench type reloading tool this can be quite a chore. In the course of a year I shoot a good many of these rifles off a bench rest. Accuracy with rifles in good condition seems to average close to 3 inches at 100 yards and about 8 inches at 200 yards after which the groups seem to open up

fast. What goes for the lever action will generally hold for the pump and semi-automatics actions also.

For the hunter who wants a rifle primarily for deer and for taking an occasional crack at a varmint at around 100 yards the lever action has plenty of accuracy for the hunting ranges usually encountered. It has been killing everything on four feet in America for well over half century with entire satisfaction.

Modern precision manufacturing methods and electronic gauges together with new steels and heat treatments, are giving us the finest firearms in history. The bolt action rifle has benefited from this. Its action not only has great strength but lends itself to close tolerances so vital to fine accuracy. Twenty-five years ago a sporting rifle that would do 3 inch groups at 100 yards was considered very good. When it went down to 2 inches it was called hot.

Recently a local gun and accessories dealer and myself took a 7 MM Mauser out of stock to see what the combination would do. We put a Weaver 10 power scope on it and shot it off the bench rest. After getting the scope adjusted, factory ammunition averaged about 2 inches at 100 yards. With handloads of two different weights and makes of bullets, 4 groups went from .9 to 1.43 inches. Also one load the rifle did not like went 4 inches. This with a new, run-of-the mill rifle with the only tuning-up consisting of pushing the grease out of the barrel. Exceptional? No! Fine accuracy, yes, but I have shot at least ten rifles, all of them factory models, in the last six months that will duplicate this performance. It is merely an example of what the hunter can expect of any of our good grade bolt action rifles today.

Thus their advantages are fine accuracy, strength of action to handle high pressures and ease of cleaning or disassembling without tools. Their stocks are bigger and generally heavier which makes steady holding easier. They do not handle as fast as the lever or pump action or have the speed of fire and generally do not point as well in snap shooting. But for the hunter who demands the utmost in power, accuracy and range, the bolt action is the best bet.

No rifle is any better than its sights. So as the range grows longer or the target is smaller, the sights must be better. If you want minute of angle accuracy you must figure on telescopic sights of at least 4 power. Some rifles may be had with either high or low comb stocks. Selecting the right stock for the sights you are going to use will save both time and money.

Summing up, the hunter has three things to consider in buying a new rifle. First the use he will put it to. Then selecting a cartridge that has latitude enough to cover his requirements. Lastly fit the cartridge to the rifle you fancy, making sure the cartridge will perform in that action the way you desire it to.

If you do these three things, then you will come close to that mythical best rifle, at least in your own mind, which is about as close as even the experts can get.

. . . *The End*

STOLEN

Custom made 250-3000 rifle by Ackley. F.N. Action, Number 236. Year—1948, with K-6 scope. Any information on this weapon should be sent to: John Sizgorich, R. D. 4, Coudersport, Pa.

WATCH OUT FOR WILDLIFE ON THE HIGHWAYS

Wildlife is a valuable resource—alive. You can spare ten seconds to keep it that way.

Gun Dog Books

By Herbert Kendrick



BOOKS written by successful dog trainers are invaluable assets to the sportsman who is faced with the interesting task of training his own dog. Complete instructions, provided by books published today, enable an inexperienced individual to select a puppy and properly educate him for the field.

Since it is sometimes difficult to learn of available training material unless we often visit the book stores of the larger cities, perhaps it may be of service to list and discuss a few of the books which have proven successful.

"How To Train Your Bird Dog," by Horace Lytle, published by The A. F. Hochwalt Co. in Dayton, Ohio.

First published in 1927, this book has been more widely used to train gun dogs than almost any other. My first pointer dog was trained by the directions in Lytle's book, and I continue to use it with each new dog. Instructive chapters cover puppies, feeding, care, housebreaking, teaching to heel, gunshyness, retrieving, backing, steadiness to wing and shot, handling, and the author's own experiences with a few of his famous dogs.

"Training Grouse and Woodcock Dogs," by Logan J. Bennett, published by G. P. Putnam's Sons, New York, New York.

This is the first American book devoted entirely to the training of bird dogs for hunting grouse and woodcock. It is written for the man who wants a woods-hunting dog. Dr. Bennett has set forth, step by step, the unique training methods he has developed and used with spectacular success in training grouse and woodcock dogs that command the praise of all who have seen them work.

The book offers a thorough and detailed course in dog training from puppy days through to the finished performer. Some subjects discussed are the use of the gun dog bell, breaking deer chasing, grouse trial dogs, training the owner, retrieving, yard training, puppy selection and care, and discipline.

"Training Your Own Bird Dog," by Henry P. Davis, published by G. P. Putnam's Sons, New York, N. Y.

This book is written for the man who is starting out with his first bird dog, and is designed to help him prepare himself for the job ahead by showing him how to understand his dog, while through understanding, more easily transmit to the dog the essentials that must be taught.

A wealth of practical information written in simple terms that any beginner may easily understand is contained in this book. Although it is directed primarily to the novice, there is valuable information for the experienced hunter and the professional trainer. Of special interest are chapters on training equipment, ranging, use of controlled game, field trial records and the Webster Price retrieving method.

"How To Train Hunting Dogs," by William F. Brown, published by A. S. Barnes and Company, New York, N. Y.

The author is the editor of *The American Field,* a superlative weekly newspaper covering field trial news in America. The book provides a successful system of training pointing dogs of all breeds, sporting spaniels, and non-slip retrievers. An unusual chapter is devoted to the telepathic communication between trainer and dog. Other interesting chapters are:

trainer qualifications, introduction to firearms, quartering, significance of field trials, spaniel technique and spaniel trials.

"Elias Vail Trains Gun Dogs," by Ella B. Moffit, published by Orange Judd Publishing Company, New York, N. Y.

Elias Vail is a professional trainer. Since 1933 he has trained pointers, setters, spaniels and retrievers with his own system that has proven highly successful. Contents of the book, in addition to the complete Vail system of training, include: temperament of sporting dogs, selection of subject for training, the amateur trainer, rules and exceptions and game raising.

"Bird Dog Training Today and Tomorrow," by E. M. Shelley, published by G. P. Putnam's Sons, New York, N. Y.

For more than 50 years Mr. Shelley has trained and handled gun dogs. During these experienced years he has studied and translated canine reactions, and the research material collected forms the basis for this book.

The first part of the text deals with simple training and correction of faults. The second half is devoted to the training of dogs on curtailed training grounds with pigeons and other planted birds.

"Bird Dogs," by Ray P. Holland, published by A. S. Barnes and Company, New York, N. Y.

This volume is a complete book on breeds, foundations and standards of all dogs that aid the sportsman in the field. It covers the pointer, the various setters, spaniels, griffon, and all retriever breeds. It also includes a chapter on "Odd Breeds" which tells of dogs who became hunters. Fundamental knowledge required for training is thoroughly discussed, and information on kenneling, care and feeding, registration, keeping the dog in the city, and how to buy a dog, is well written.

The book is a handsome addition to a sports library. It is illustrated in color and black and white by Fred McCaleb. From this book I learned about the electronic system of a microphone on the night table near the bed, and a speaker in the kennel. This devise enables me to speak to the dog to quiet him without getting out of bed.

Other valuable books are:

"Training You To Train Your Dog," by Blanche Saunders, published by Doubleday & Company, Inc., New York, N. Y. This book is for training dogs of all breeds.

"How To Win Field Trials," by Horace Lytle, published by D. Van Nostrand Company, Inc., New York, N. Y.

"Training Your Spaniel," by Clarence J. Pfaffenberger, published by G. P. Putnam's Sons, New York, N. Y.

"Simple Secrets of Dog Discipline," by Horace Lytle, published by G. P. Putnam's Sons, New York, N. Y.

"The Modern Dog Encyclopedia," by Henry P. Davis, published by The Stackpole Company, Harrisburg, Pa.

Of course only a few books have been mentioned, however, it is hoped that these descriptions will furnish you enough information to select the one which will cause you to enjoy and use the experiences of men who have spent many years helping to develop better hunting dogs.

. . . *The End.*

WATCH OUT FOR WILDLIFE ON THE HIGHWAYS

Most of the actions and reactions of wild creatures are instinctive. They do not know what an automobile is. They cannot judge its speed. They become confused when they try to avoid it. Just a light touch of your brakes—a momentary reduction of speed—will give them a chance.

Interchangeable Tips

By Tom Forbes

LIKE the gunner who, hearing a turkey gobble nearby, extracts the loads of Number 7 shot from his gun and slips a couple of Number 4's into the chamber, the modern day archer can also change quickly from one "load" to another. You can change tips in the field from a field point to a blunt or to a broadhead, still using a single feathered shaft.

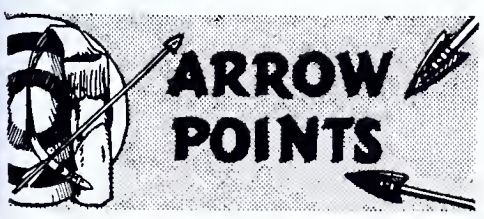
Archers customarily carry matched sets of arrows consisting of a half-dozen each of field points and broadheads into the hunting field. Frequently, the archer's quiver will be large enough to carry, in addition, a half-dozen blunts when there is a possibility that a gray squirrel will offer a tempting target. Any archer carrying a quiver holding 18 feathered shafts has a bulky package to maneuver through the undergrowth. The "ammunition" also represents a considerable financial outlay.

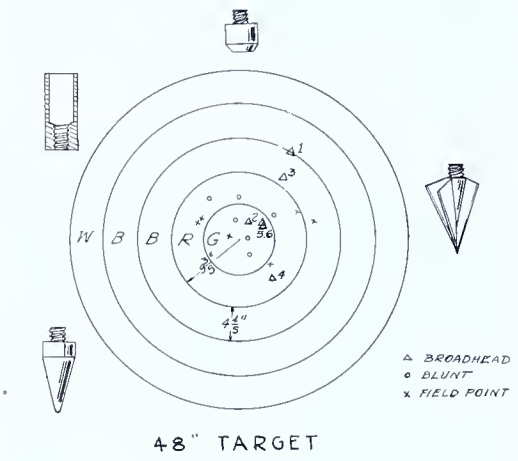
The "Everitt Quick Change Arrowhead" permits an archer to reduce the number of shafts carried by two-thirds without loss of ammunition of the proper kind for the game he is likely to encounter. Conversely, the archer can increase the number of any one type of arrow points without increasing the overall number of shafts carried in the quiver. The head is composed of two parts—a metal ferrule and a tip. The ferrule is fixed permanently to the wooden shaft in the same manner that one attaches a regular point. The base of the ferrule is tapped and threaded. The cross-sectional drawing of the ferrule in the accompanying illustration indicates good design. If the shaft is carefully seated, it will stand up well under impact and should not crush at the shoulder, a common failing on conical pointed shafts unless the archer has a special tool to match the exact taper of the head. Ferrules are available at present in three sizes to fit 5/16 inch, 9/32 inch, and 11/32 inch shafts and are priced at $1.50 per dozen.

Tips can be changed in seconds. Blunt, field and broadhead tips are available. The broadheads are three-bladed. They are formed of pressed steel, spot-welded, and have a well ground cutting edge. The three-bladed broadhead is favored by the author. It appears to have less tendency to plane or drift than the single blade and is the easiest of the broadheads to sharpen. A tyro can grind a keen uniform cutting edge by holding two edges of the broadhead on the stone at the same time. These tips, when screwed into the ferrule, seat solidly against flat bases. No tools are required to change from one tip to another. Field tips sell for $1.50, blunts $1.20, and broadheads $4.25 per dozen.

It is extremely important to the

The viewpoints expressed in this article are those of the author alone. Publication of this information is performed as a public service only. In no way does it constitute any endorsement or appraisal of any commercial product by the Pennsylvania Game Commission.





48" TARGET

archer that each shaft in his quiver match in performance every other shaft. Otherwise no two shafts regardless of the skill of the archer would except by chance strike the same mark. Materials of high standard and workmanship of the first order must be maintained to meet this goal.

A set of four of each of the kinds of tips and four of the ferrules were chosen by lot and weighed on pharmacist scales accurate to within one grain. Three of the broadheads weighed 115 grains each and the fourth weighed 114 grains. The four field points weighed 120 grains each and the blunts 107 grains each. Two of the ferrules weighed 50 grains each, one 47 grains and the fourth weighed 46 grains.

The ferrule equipped with the field point is the heaviest of the possible combinations. This group averaged 167.2 grains in weight. Maximum variation within the group was 4 grains. The lightest combination proved to be the ferrule equipped with the blunt which averaged 154.2 grains. The maximum average variation between combinations was 13 grains. Ordinary broadheads available on the market weigh from 120 to 130 grains for 11/32-inch shafts.

For field testing these heads I chose two target shafts, fletched with feathers 3½ inch in length and ½ inch in height. I removed the target point from each shaft and installed the ferrule in their places. The arrow at this stage measured 27½ inches in length. A thirty-five pound bow equipped with a sight was used and the range distance established at twenty yards. The light weight bow and target arrow fletching were deliberately chosen to allow plenty of opportunity for the heavy forend of the shaft to exert its effect on the flight of the arrow. It was the thought of the writer that any group shot under these conditions would be improved by shooting arrows fletched for the hunting field heads and a heavier bow.

No preliminary practice was taken. Two aluminum alloy target arrows were shot for the purpose of setting the bow sight. Next the test shafts were equipped with blunts and shot. Their point of impact was eight inches below that of my target arrows. The sight was adjusted accordingly. Without any further preparation the blunt tips were unscrewed from the shafts and the field tips or points substituted. Record shots were then loosed in three groups of two shots each and the results recorded. The same procedure was followed with the blunts and then with the broadheads. A total of eighteen shots were loosed for record. The center of the target was used as an aiming point throughout the test.

In evaluating the results I would discount the number 1 broadhead shot which I knew was a poor release as it left the bow. Nevertheless I have shown it to make a complete record.

It was evident as the shooting progressed that my sight setting was nearer one o'clock than dead center in the gold. However I did not change the aiming point throughout

the test; preferring to simulate conditions in the hunting field where the first shot is generally the only shot one can expect and more particularly to permit the pattern to develop on the target without any conscious effort on my part to compensate by changing the aiming point for any deviation caused by changing tips.

A single test cannot be considered conclusive but I am convinced that there is merit in the interchangeable tip and I believe their accuracy compares favorably with the fixed head equipped shafts. If half a dozen shafts will now provide the same variety and number of heads that formerly required eighteen shafts, the



interchangeable tip certainly rates a trial on the basis of economy of ammunition alone.

. . . *The End*

Roaming Dogs

Wild birds and animals encounter many hazards other than hunters' guns in their lifetime. Among them are the elements, predation, disease, and machines on highways and farms. Not much can be done to reduce these risks.

But there is one unnecessary hazard to wild creatures—the dog. Control of the roaming dog menace only requires that owners recognize and fulfill their responsibilities. Free running dogs destroy untold numbers of nests and young of wildlife. The affect of marauding dogs on deer, too, is extensive. Revolted game protectors have wished lax dog owners could be with them to hear the pitiful bleats and see the torn bodies of deer run to earth by canine pets on the loose.

Man's best friend sometimes reverts to natural instincts and becomes a killer. Roaming gangs of dogs can be a liability in various ways. The owner is held responsible for poultry and livestock destroyed and for attacks on humans by his dog.

Strictly on the wildlife issue this also should be considered: Wild game killed at this time of year is parent stock. The greater the wild life loss in the next few months the less the reproduction and the smaller the shootable supply in coming seasons.

The Game Commission appeals to Pennsylvania dog owners to pen, tie up or closely control their pets and hunting companions. They point out that such measures are necessary not only for the sake of wildlife but because it is humane and wise to do so.



PGC Photo by Parlaman

Members of the Warren Field and Stream Club turned out for a real conservation good turn on February 21 when they undertook a browse cutting operation on State Game Lands 29. Working with Commission employees, the sportsmen downed red maple and aspen browse on about 20 acres—the best possible means of winter feeding deer.

Is Your Number Up?

Your GAME NEWS number, we mean! Take a careful look at the mailing label for this issue. The number printed in the upper right corner will tell you when your present subscription expires. The first digit indicates the month (1 for January, 12 for December) and the other two numbers signify the year. And, please, send us your renewal order at least 45 days in advance—we don't want you to miss a single copy of your magazine. The subscription blank printed below for your convenience makes it easy to keep GAME NEWS coming!

PENNSYLVANIA GAME NEWS **SUBSCRIPTION ORDER**

Please renew my subscription for GAME NEWS as follows:

$1.00 per year $2.50 Special Rate for Three Years

Name .....

Street or R. D. .....

Post Office .....

(Make check or money order payable to: Pennsylvania Game Commission)

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

AVAILABLE NOW



THE PENNSYLVANIA BIRD CHARTS

IN FULL COLOR

FOR SCHOOLS AND CLUBS. SIZE 22 x 28 INCHES
METAL STRIPPED TOP AND BOTTOM.

ORDER NOW CHECK OR MONEY ORDER TO GAME COMMISSION, HARRISBURG, PENNA.

$1.50 PER SE

PENNSYLVANIA

Game News

JUNE 1954

10 CENTS



PENNSYLVANIA STATE
DOCUMENTS SECTION

Q38.34
106



THE STORY BEHIND THE COVER

OF all Pennsylvania's hawks, the robin-sized bird so colorfully portraye on this month's cover probably needs the least introduction. Most com mon and most easily recognized, the sparrow hawk is often seen perche on tree stubs or telephone poles and wires along our country roads. It is common resident in summer and many make the Commonwealth their yea round home.

Sparrow hawks are birds of "broken" country where the land is a mixtur of meadows and woods, fields and forests. It is one of the few hawks tha has taken civilization in its stride, even to the extent of nesting in man-mad bird boxes. These little falcons pair up in April and May and select thei "nursery" in some cavity resulting from human effort or the work of othe birds like the flicker. By early June they are busy raising the four or fiv freshly hatched nestlings.

Colorful and highly captivating, the sparrow hawk makes an ideal subje for those who are interested in studying first-hand the relationships of single hawk to his surroundings. If you observe this particular hawk close and carefully, it doesn't take long to discover he is quite mis-named. He do not feed much, if at all, on sparrows and he is obviously larger in siz Actually, to name this bird from its dietary habits, you would best call hi "grasshopper" hawk. Over three-quarters of a sparrow hawk's bill of fa comes from the insect family, with grasshoppers, beetles, and crickets leadi the list. The remaining portion of this hawk's diet is divided betwee meadow mice, reptiles, amphibians, and an occasional small bird. Even t bird's common call of "killy, killy, killy, belies its behavior; it is no more "killer" than any other member of the animal kingdom, seldom attacki anything it does not intend to eat.

Light and quick, this touch of feathered lightning is a valuable additi to Pennsylvania's native wildlife. The sparrow hawk lends charm, color, a benefit to the countryside in which it lives and fully justifies the protecti given it by law. Dashing past with sweeping wing beats or hovering in o lofty spot as if suspended on an invisible string, the jaunty and beautif sparrow hawk is worthy of your acquaintance and conservation interest.

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 6

June, 1954

CONTENTS

The Old Game Protector and—The Fraudulent Fox Claim .. 4

A Brief History of the Indian Hunter 8
By John Witthoft

Field Notes 18

Waterproof Your Tent 22
By Warren Asa

Bird Dog of the Year 24
By Marc De Berti

Federal Aid In Wildlife Restoration — Southwestern Pennsylvania 27

'Chuck Hunting Equipment ... 37
By Robert Bell

★

Cover Painting
By
Earl L. Poole

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Soil Conservation Service Photo

Editorial . . .

Land of Outdoor Opportunity

IT HAS become increasingly clear that modern man needs more than bread alone. If he is to achieve and maintain his maximum productive effort, something more than modern machinery, soft music, good food, and miracle medicines is required.

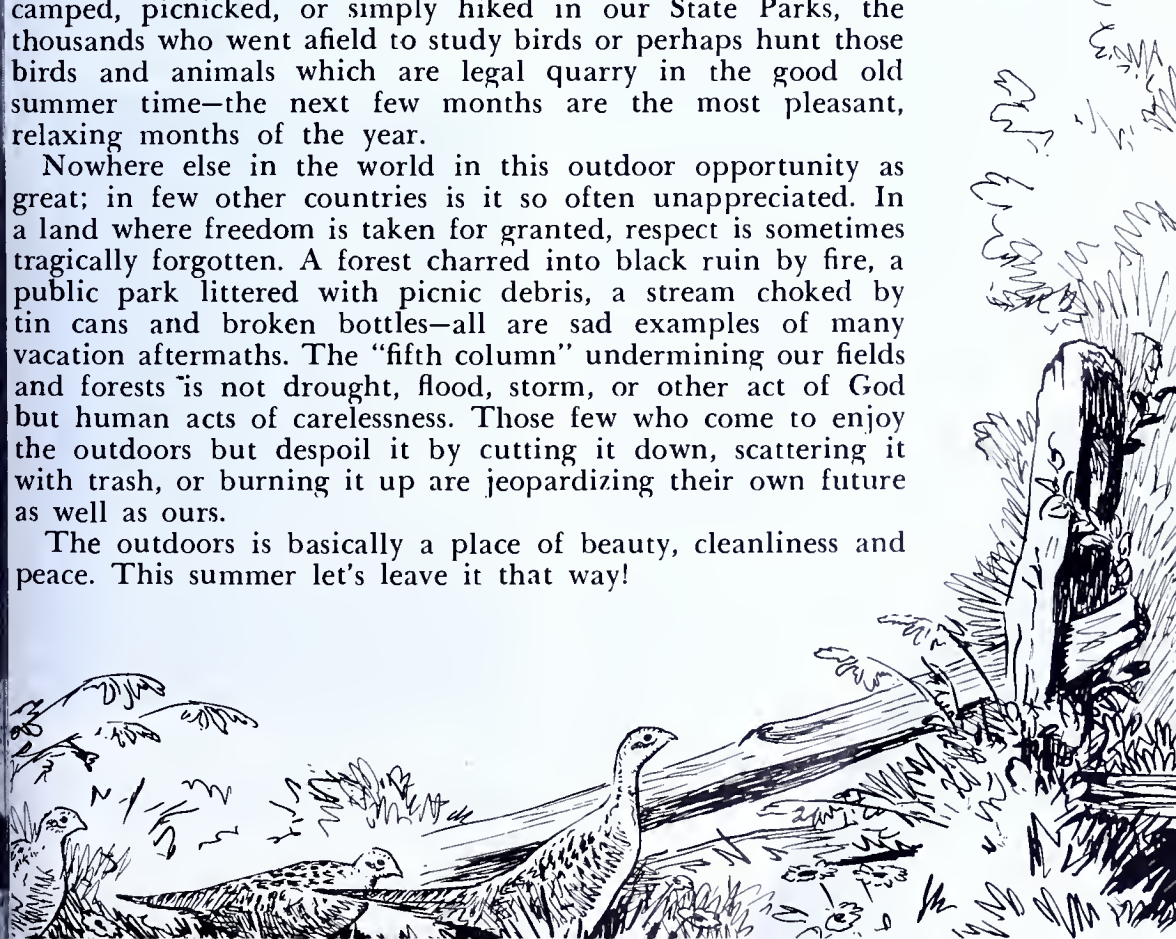
This month that additional necessity of twentieth century living comes into sharp focus with the arrival of vacation time. For most of us who live in jungles of cement and steel, who are busy for long periods at the exacting task of earning our "bread and butter," there is a physical, spiritual and mental lift in just getting out into the country. The occasion may be only an afternoon picnic or perhaps a month-long trip to some scenic wonderland. But to most Americans the opportunity to get outdoors during the summer months makes the rush of fall, the cold of winter, and the expectancy of spring endurable.

There are those who fail to realize and appreciate this freedom—this essential need for giving the modern mind and body a rest. These are the people who are so intent in the pursuit of life's tangibles—money, power, position or property—that they fail miserably in the pursuit of happiness. You will eventually find many of them inhabiting our mental hospitals, correctional institutions, or "skid rows"—outcasts from the society which they sought so hard to conquer.

But for the vast majority of Americans—the 30 million who visited our National Forests last summer, the millions more who camped, picnicked, or simply hiked in our State Parks, the thousands who went afield to study birds or perhaps hunt those birds and animals which are legal quarry in the good old summer time—the next few months are the most pleasant, relaxing months of the year.

Nowhere else in the world in this outdoor opportunity as great; in few other countries is it so often unappreciated. In a land where freedom is taken for granted, respect is sometimes tragically forgotten. A forest charred into black ruin by fire, a public park littered with picnic debris, a stream choked by tin cans and broken bottles—all are sad examples of many vacation aftermaths. The "fifth column" undermining our fields and forests is not drought, flood, storm, or other act of God but human acts of carelessness. Those few who come to enjoy the outdoors but despoil it by cutting it down, scattering it with trash, or burning it up are jeopardizing their own future as well as ours.

The outdoors is basically a place of beauty, cleanliness and peace. This summer let's leave it that way!



THE OLD GAME PROTECTOR AND



The Fraudulent Fox Claim

Although written in fictional fashion, this is a TRUE story, based on an actual experience of District Game Protector William D. Denton, Clarion, and former District Game Protector Paul Failor who is now Supervisor, Predator Control Section, Harrisburg.

FROM somewhere in the quiet, desolate looking house, they heard the faint ringing of the doorbell. Outside, only the lazy drone of bees and an occasional chirp of a sparrow broke the solitude of the warm, May afternoon. To the two men standing on the front porch of the house, overlooking the broad panorama of the Delaware, it seemed as though time was suddenly standing still.

"Sure begins to look like nobody is home," the Old Game Protector sighed. "Try the buzzer just once more before we call it quits."

The younger man replied, "Wait, Bill. I think I hear somebody coming at last." And before there was time to say more, the door squeaked open to show a tall, tired looking man doing up the last few buttons of a faded, dirty shirt.

The younger of the two visitors spoke first. "How-do, sir. We're Pennsylvania Game Protectors and are here to talk with you about the trapping you did last winter."

"Y'mean about that bounty claim I put in a while back?" the tall man snapped back.

"Well, yes—that and some other things," the Old Game Protector replied.

The tall man was quiet for a moment, then finally said, "Now, ain't that a coincidence. I was just sayin' to my housekeeper this mornin' that it was funny I ain't got my fox pelts back yet. Usually they come almost the same time as the check from Harrisburg. Did you boys bring the pelts along, by any chance?"

"No, we didn't," said the Old Game Protector. "We just thought we might ask a few more questions about your trapping, in addition to what you stated on your claims affidavit."

"Well, now," the tall man responded, a half grin beginning to appear on his unshaven face. "If it's about the dates I put down on that there paper, you boys understand a fella sometimes can't quite recollect exact times. I tried to mark 'em all down on a piece of scrap paper I carried in my basket—but you know how 'tis. Pretty hard to write out there on the line."

The young officer, who had been standing quietly on the porch all the

time, suddenly interrupted. "How much trapping do you do across the river in Jersey?"

As the grin quickly disappeared from the tall man's face, he answered in a calm and deliberate voice. "Not much at all, boys. I didn't think it made any difference else I would have mentioned it before. But let me set you straight. Any fox I get on the other side gets probated for bounty over there and any fox I catch here in Pennsylvania gets paid for here. Don't you worry about me getting my foxes mixed up. Why ask anybody if I'm not just as honest as the day is long."

"O. K. mister. We just want to get things straight for the record. Mind telling us where you probated the Jersey pelts?"

"Nope," replied the tall man. "My Jersey foxes was all taken to the Squire at Blairstown."

The Old Game Protector nodded thoughtfully before replying. "Well, it's been nice talking with you, mister, but we have other business to attend to this afternoon. Let's go, Paul."



William D. Denton
District Game Protector
Clarion



Paul L. Failor
Supervisor, Predator Control Section
Wildlife Protection Division
Harrisburg

As the two officers strode quickly down the walk towards their car, the tall man called, "You tell those boys down in Harrisburg to get those pelts back to me right away. My dealer ain't gonna wait forever."

A few minutes later, the Old Game Protector wheeled the car in the direction of the big bridge which lay like a huge steel centipede spanning the river. He raised one hand from the steering wheel to remove the battered old pipe from his mouth before muttering. "Still looks fishy to me. Those boys down in the bounty office at Harrisburg don't suggest these investigations without good cause. And that trapper was too evasive on his answers, if you should ask me."

"I'll go along on that one hundred percent," his younger companion replied. "Beats me how Pat and his boys can spot a few bad pelts in the thousands that they handle every year—but they can do it every time. I'm just as anxious as you are to



"Let me set you straight," he said. "Any fox I get on the other side gets probated for bounty over there."

NED SM

hear what that Justice of the Peace in Blairstown has to say."

Several hours later the two men were emerging from the office of the New Jersey magistrate, smiling and conversing intently. As the Old Game Protector stopped in front of the black and gold sign on the lawn to light his pipe, the second game law officer was saying, "Say, wasn't the J.P. a fine old gentleman. Don't ever meet any better."

The Old Game Protector replied, "Yup, Paul, this country would never run unless we had law officials like that. And I'll be frank to admit that when he identified those fox pelts that belonged to our friend across the river, I could have almost kissed him."

"How about that! His marking system sure was clever. It fooled the trapper and it would have fooled me if I hadn't seen how the J.P. did it." Then, as the two Pennsylvania officers got into their car, the young game protector continued, "I just can't understand some people. They think the law applies to everyone else except them. Here's one that tries to burn the candle at both ends. He collects from the Jersey-ites then turns around and tries to hook the Pennsylvania sportsmen. Let's get back across the river and nail that varmint!"

"Not too fast, my friend," replied the Old Game Protector. "First we've got to prove even further that bounty was actually paid twice on these fox pelts. Best way I know is to get a statement from the county officials in charge of bounty payments here on this side of the river. Then we'll have this case sewed up tight. We'll be ready for final action tomorrow."

The following day, as the mid-afternoon sun beat down on the Old Game Protector's small sedan, the two officers mopped away the perspiration dripping down from underneath their hats. They had patiently been sitting in the car since noon, keeping the house along the river under observation. Following the securing of a proper arrest warrant that morning, the two officers had visited the tall trapper's house only to find no one home. Now it was simply a matter of sit, wait, and hope.

Hour after hour dragged by without any sign of life in the house. Finally, long after darkness had drawn its black shadow across the river valley, the two half-starved and seat-weary officers saw a light flicker on the porch as the tall trapper lit a match in unlocking the door. In seconds, he was confronted with two determined officers of the law, had been served a warrant, and was duly and properly placed under arrest.

Much later, the Old Game Protector eased his car to a halt on a side street in Mount Pocono, then with a wry smile reached over to nudge his companion awake. "Home again, Paul."

The younger officer yawned long and loud before replying. "Man, if that dawgone trapper had held out another ten minutes, I couldn't have kept awake long enough to hear his confession. Don't recall ever seeing a man lie so coolly and cleverly, nor hold out so long when the evidence was piled so strong against him."

"Well," the Old Game Protector said. "They don't all come easy. But I'll bet hearing that Justice of the Peace down at East Stroudsburg say $300 fine, $149 refund to the Game Commission for the money fraudulently collected, and $15 costs will cause our tall trapper to think twice before he tries the same stunt again.

"But say, Paul, we better hit the hay. Judging by that dawn's early light just showing over yonder mountains, if we don't get to bed right now, we'll be almost too late to get up this morning. Besides, I've got refuge lines to mow up on the Game Lands before it gets dark again."

. . . The End



Wooly Mammoth—from an original oil painting by Chas. R. Knight

A Brief History of the Indian Hunter

By John Witthoft

THE Indian had lived in Pennsylvania for long ages before the white man arrived, but he wrote no books and kept no records. His whole history has been entirely a matter of conjecture until very recent years. Indian history from the historian's viewpoint is the sparse record of events that involved Indians during the frontier period, a matter of very slight importance compared to the great total of earlier human experience in the new world. A new and revolutionary type of history is the product of archeology, which deciphers the records of ancient human life, the lost tools, refuse, and signs of habitation which man unconsciously and necessarily leaves behind him. Archeological history needs no written documents, and is hence not restricted to a tiny fragment of past human activity.

In earlier articles in this magazine, I sketched what we know of the Indian hunter as our forefathers saw him, with information drawn from ethnology. In this article, I will outline what we know, from archeological research, about his life in still earlier times. We are primarily concerned here with such questions as: how long ago did Indian hunters course our landscape, what hunting tools did they use, how did their ways of life, their tools, and the types of game change, and what sort of men were they? I shall not here attempt to explain the way in which Indian remains and relics are studied, how we collect and interpret our data, or the precise evidence for each statement, since these are very elaborate topics indeed, and would take an impossible amount of space and time. Instead, I shall try to picture the man and his ways, and to outline his progress in the arts of life, and his gradual development of some of the tools and institutions of primitive civilization.

Man of the Forest

First, let us look at the man himself, as we know him from the grave where his family laid him to his last rest. At all times for which we have skeletal material, we can see the same sort of man, of the same build, features, general appearance, and racial type. Even our earliest skeletal material from the Northeast, slightly more than five thousand years old, represents Indians like those of the colonial frontier, and like some of the surviving people on our reservations today. During the past five thousand years, the Indians of our local area changed very little, and represent continued survival of very ancient settlers. Earlier than this we have no skeletal material from any part of the Americas; we do not yet know much about the Indian of still earlier times, who is represented only by his tools.

The Indian of our eastern forests was a small man, almost never more than five feet, five inches tall. He was of very slight build, and probably rarely weighed more than a hundred and thirty pounds. His bones are especially light and delicate as compared to almost all other human types, and delicate modeling of the facial bones and thinness of the skull bones is conspicuous in Indian skeletons. Despite this, he was almost always an exceedingly muscular man, as is indicated by the form of those

---

ABOUT THE AUTHOR

In a very popular series of three articles published by GAME NEWS *in 1953, State Anthropologist John Witthoft discussed the American Indian as a hunter. This article, first in a series of three, outlines what is known about Indian life in still earlier times. Mr. Witthoft is a nationally recognized authority on the American Indian and has been employed by the Pennsylvania State Museum since 1948.*

Paleo-Indian Epoch	18,000 to 8,000 Years Ago	Hunters of Big Game Animals of Extinct Types
Archaic Epoch	8,000 to 3,000 Years Ago	Hunters of Small Game and of Wild Plant Foods
Woodland Epoch	3,000 to 400 Years Ago	Farmers, Fishermen and Hunters

"Three Great Ages of Pennsylvania Indian History"

parts of his bones which were at the ends of muscle-bundles. All evidence from the skeletons suggests that the Indian was wiry, strong, and extremely tough. He was fullfaced as compared to ourselves, with jutting cheek bones and a large, well developed palate and dental arch. Despite this, his teeth were quite as bad as ours, were subject to the same decay and diseases, and to much more wear; he had ordinarily lost all but a few of them before he was thirty-five years old. He did not chew the way we do, but was used to tough fare and bit with his incisors edge-to-edge grinding with both his front teeth and molars. Eskimo still chew this way, because they still live on such a tough diet. Our Indian hunter scarcely ever lived to be forty years old, and usually died before he was thirty-five. Probably his diseased teeth and the effects of the infections they caused were a prelude to death. Hunger, exposure, and hunting accidents were probably the other major causes of early death. Various arthritic and rheumatoid diseases were remarkably frequent and often severe, judging by evidence of the skeletons. The Indian was a tough, wiry little man who carried many physical defects and who was constantly exposed to the worst rigors of our climate. He slept curled into a ball, with his knees under his chin, a habit acquired during a lifelong struggle against a cold and brutal natural world. He was a man who lived very hard and died young. This is not the Indian of our romantic literature, but it is most certainly the Indian whose bones we study.

The Ages of New World Man

In my earlier articles, *The American Indian—Hunter,* I described the way of life of the aboriginal hunter as we see it through behavior and belief that have survived until modern times. This was the latest and

most highly developed civilization of the local Indian world, but it is only one stage in a long history. Conditions of life and ways of doing things were no more static for the Indian than they were for other peoples, and archeology is our only way of discovering and understanding the long development of Indian life and technology. At the present time, we recognize Indian history as having gone through many stages, and have outlined these under convenient labels in both major and lesser divisions. The total of our Indian history is divided into three long ages, called epochs, and these are in turn divided into periods, which are in turn subdivided in several ways. In this article I shall be concerned only with the major divisions, epochs and periods, and with the hunting tools, game animals, and general way of life during each.

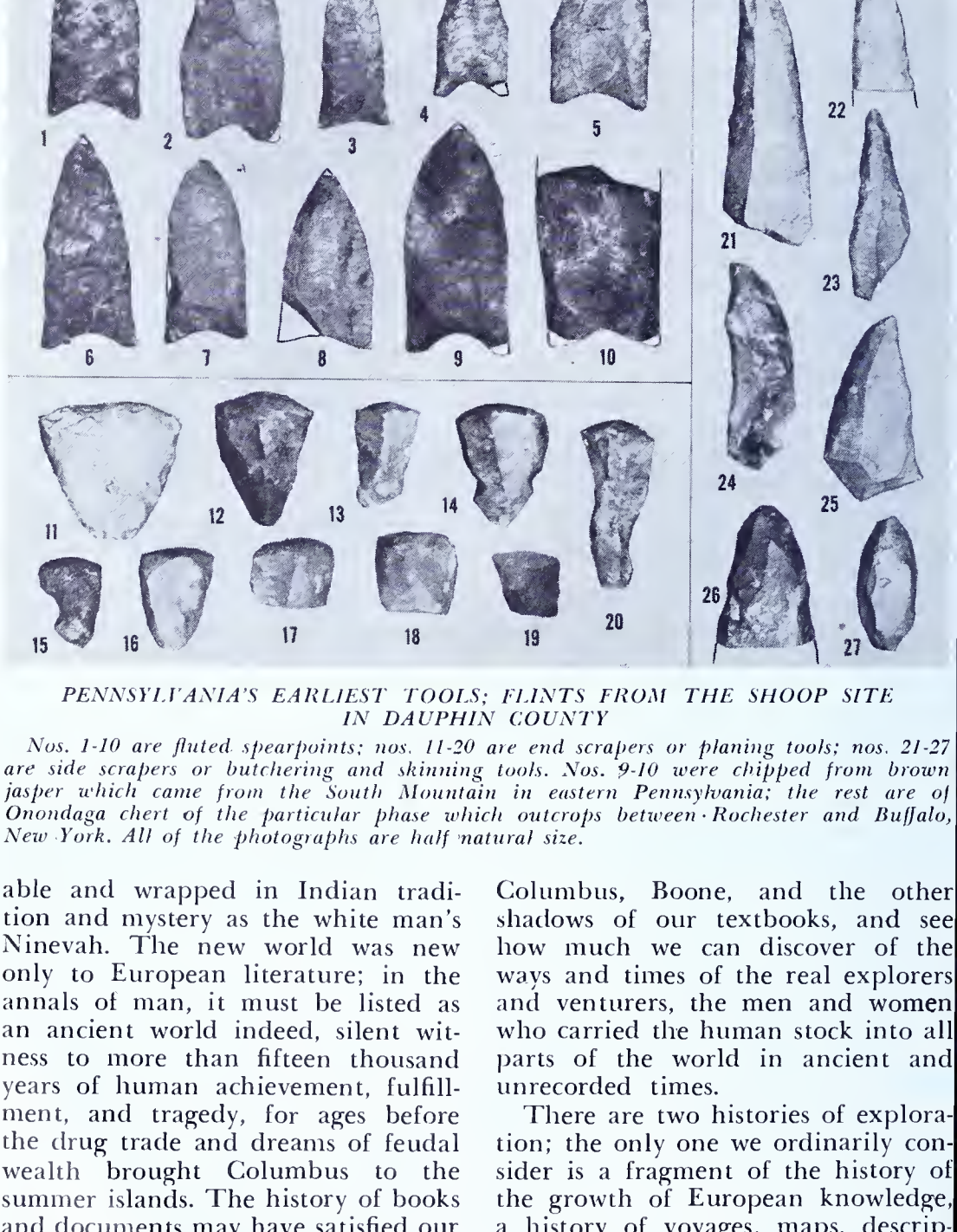
The Paleo-Indian Epoch began more than twelve thousand years ago, probably nearly eighteen thousand years ago, and ended perhaps eight thousand years ago. We have no idea what man of Paleo-Indian times looked like. He chipped all of his tools from flint, using no other stone and never shaping a tool by battering or grinding. He lived here when the climate was very different than it is now, and when the vegetation on the land was different. He lived entirely by hunting, and he killed animals which are entirely extinct and which, in fact, did not survive into later epochs of Indian history.

The Archaic Epoch began about eight thousand years ago and lasted until about three thousand years ago. Archaic man is well-known from his graves, and was an Indian of the same general appearance as those known to our white ancestors. He made some of his tools by chipping, but he also used other stones besides flint, and he formed many of his tools by battering and grinding them into shape. He hunted animals of species which still exist in the woods about us, but he did not live entirely by hunting; he collected many wild edible plants and had begun to supplement his meat and vegetable diet by fishing. In the Northeast, he did not yet eat shellfish, although he did depend upon such food at times in other areas, such as Florida and the Mississippi Valley. He did no farming and made no pottery cooking-vessels, apparently roasting his meat. Neither had he begun to cultivate and smoke tobacco.

The Woodland Epoch began about three thousand years ago and ended when Indians fled beyond the frontier of white settlement or adapted the ways of the White man. The Woodland Indians lived by farming, hunting, fishing, gathering wild food plants, and digging shell-fish. They made pottery vessels and seem to have usually preferred to boil their foods into soups and stews. They built permanent houses, and lived among their cultivated fields in little villages or individual farmsteads. Before this time, the women and children had followed the men from camp to camp after the game. In Woodland times the household stayed in one habitation and the men traveled to the game, often for great distances, while the women stayed at home and tended their gardens.

The First Settlers

Daniel Boone may have thought he was the first human to set foot on some of the wilderness of Kentucky, but I doubt he believed this, for it charges him with two points of ignorance; namely, that he had no knowledge of other illiterate borderers who had preceded him, and that he did not consider the Indian to be human. Actually, Kentucky had been a dark and bloody ground years before, in Indian wars that Boone and other whites had never heard of. It was an ancient and well-known part of Indian geography, as vener-



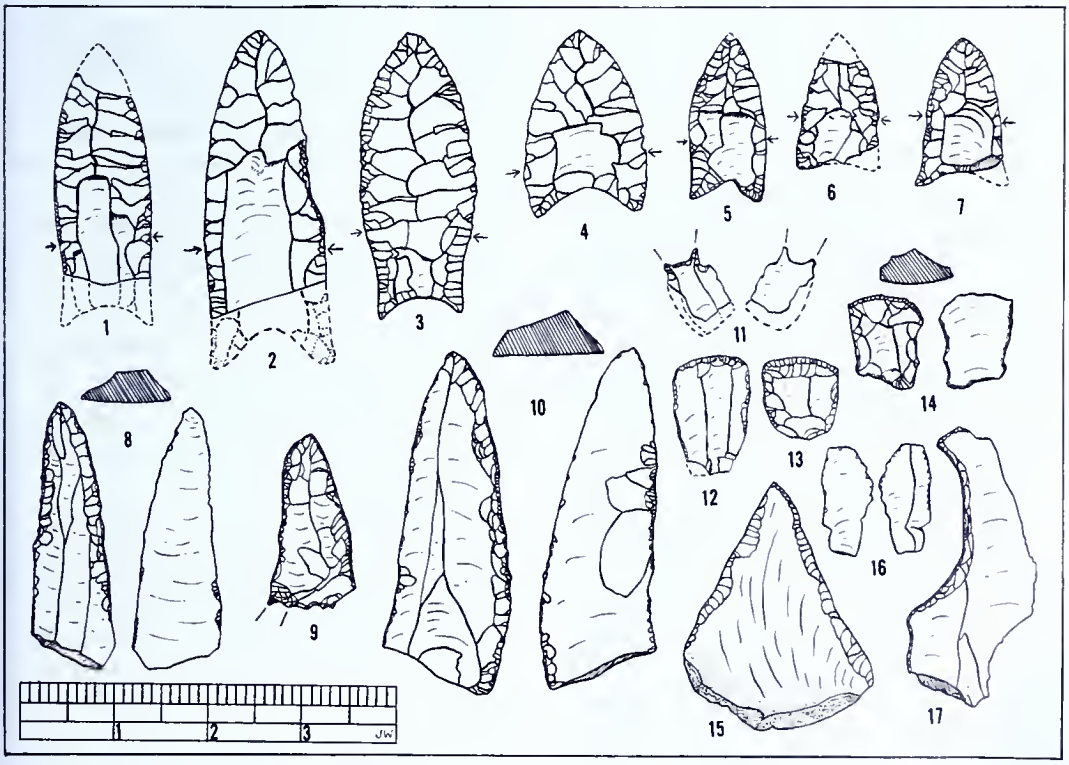
PENNSYLVANIA'S EARLIEST TOOLS; FLINTS FROM THE SHOOP SITE IN DAUPHIN COUNTY

Nos. 1-10 are fluted spearpoints; nos. 11-20 are end scrapers or planing tools; nos. 21-27 are side scrapers or butchering and skinning tools. Nos. 9-10 were chipped from brown jasper which came from the South Mountain in eastern Pennsylvania; the rest are of Onondaga chert of the particular phase which outcrops between Rochester and Buffalo, New York. All of the photographs are half natural size.

able and wrapped in Indian tradition and mystery as the white man's Ninevah. The new world was new only to European literature; in the annals of man, it must be listed as an ancient world indeed, silent witness to more than fifteen thousand years of human achievement, fulfillment, and tragedy, for ages before the drug trade and dreams of feudal wealth brought Columbus to the summer islands. The history of books and documents may have satisfied our forefathers, and given them great comfort in matters of ego; nevertheless, the real history of human affairs is no mere chronicle of "pen and paper work," but a noble tale of the blood, seed, and works of humanity at large. So let us forget Columbus, Boone, and the other shadows of our textbooks, and see how much we can discover of the ways and times of the real explorers and venturers, the men and women who carried the human stock into all parts of the world in ancient and unrecorded times.

There are two histories of exploration; the only one we ordinarily consider is a fragment of the history of the growth of European knowledge, a history of voyages, maps, descriptions, and conceits. As a matter of fact, everywhere that the first European explorers traveled in the parts of the world which were new to them, they ate the food, accepted the hospitality, followed the travel directions, and abused the women

and good graces of people already living in those parts. Exploration in the age of Columbus was like setting out to cross France with a full wallet and a large bodyguard. However, the epics of the lives of primitives (those odd people whom our ancestors considered animals, although they fathered many a child upon them), if they ever be written, include very different types of explorations. Ten thousand years ago, the world was full of humans; men of completely modern appearance, but with primitive tools and techniques, had penetrated to every habitable corner of Asia and Africa, Australia and Tasmania, North and South America. Since that time, there have been only two new human penetrations into any large part of the lands of this world, only two entries into regions where no one lived and man had never tread before. The first of these was the discovery of the far-flung islands of the Pacific by the Polynesians, whose desperate sailing voyages on the open seas had taken them to every island of any importance before 1300 A. D. They filled the last great void in our world which was available to human settlement. The other new land is Antarctica, which will not support human life and which was first touched by men within the past century. The Arctic was not such a new world; everywhere in the northern



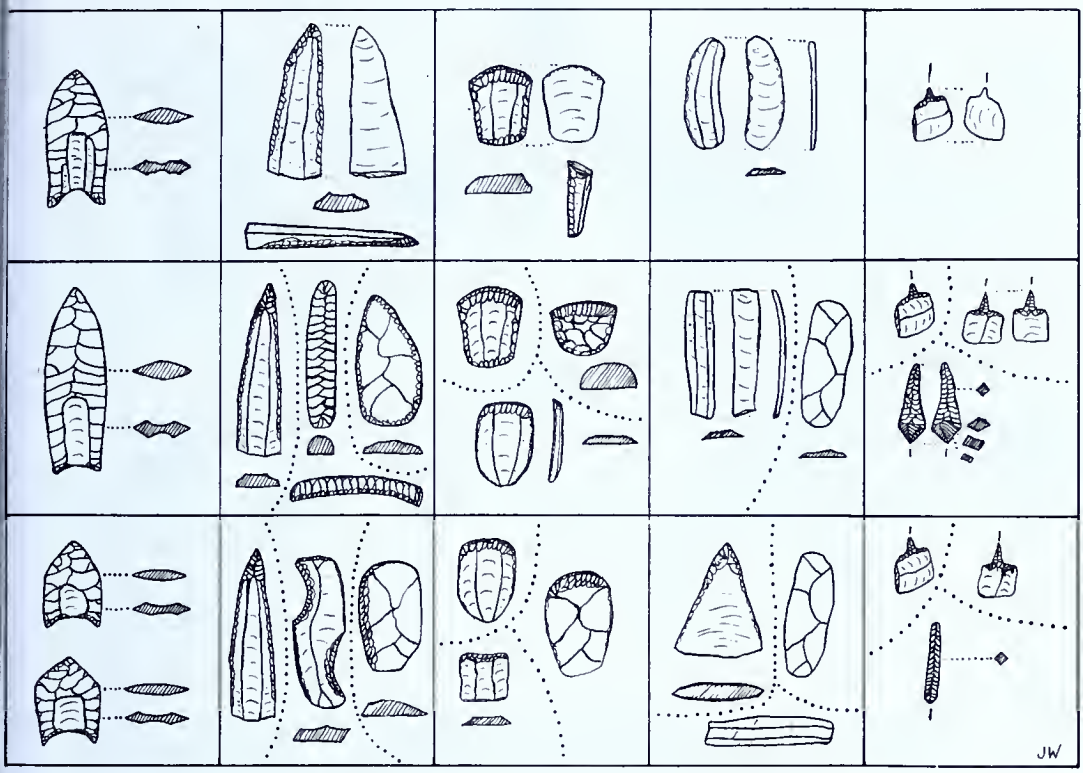
Flint tools of the Paleo-Indian epoch, 8,000-16,000 years old. Fluted spearpoints, 1-7; side scrapers, 8-10; gravers, 9 and 11; end scrapers, 12-14; knives, 15, 16; spokeshave or shaft scraper, 17. 1 is of blue-green flint and was found near Pittsburgh; 2 is a composite drawing of two broken, uncataloged specimens found near Highspire, Dauphin Co.; both are of whitish chert, and resemble the fluted points found at Clovis, New Mexico. 3 is of Pennsylvania jasper, very much rotted, from the Wyoming Valley; 4 is a white chert fluted point found in northeastern Lancaster Co.; 5, 8, 9, 11, 13, 14, and 16 are from the Shoop Site in Dauphin Co., and are made of Onondaga Chert from western New York; 11 is an engraving tool, and the lines point to the cutting points. 6, 7, 10, 12, 15 and 17 are from the Whilhelm Site in Lebanon Co., are all made of Pennsylvania jasper and are in the collection of Sam S. Farver at Palmyra.

regions, the evidence of archeology indicates that Eskimo had long preceded whites in exploration of every bit of land and even of vast northern ice flows, and that Eskimo had long lived on arctic lands where the white explorer could scarcely survive with imported supplies. The most southern parts of South America were occupied by Indians ten thousand years ago, and their forefathers had come to there from Asia by way of North America, Alaska, and Siberia. Where does this leave Columbus and the discovery of the "New World," except as the approach of a vanguard of Spanish armies?

Paleo-Indian Man

The earliest settlers in North America are best-known from sites at Clovis, New Mexico; Miami, Texas; the Shoop Site in Dauphin County, Pennsylvania; and a few less extensive remains. All of our evidence about the animals they hunted comes from the western sites; the largest part of our information about their tools comes from Pennsylvania, although their spearpoints have been found and studied in all parts of North America. They lived here during some of the warmer stages of late glacial times, probably living at the sites I have mentioned about fifteen thousand years ago. They hunted with stabbing spears or lances, tipped with very delicately-made and easily-recognizable flint tips, and their favorite game animals were elephants, the extinct American mammoth and his relatives. As a matter of fact, no animal bone except that of several species of elephant has yet been found in the sites that have been excavated, although other animals must have been eaten. Apparently our first hunters preferred a large family-sized meat package when they could get it, and they probably were the agents who exterminated the American pachyderms. These people were not numerous, and they moved rapidly over the countryside in pursuit of game, so that the sites where they camped are small, hard to find, and do not have relics in any abundance. They made and used only a few kinds of tools, and these are quite different than those made by later Indians.

The most distinctive tool of the Early Paleo-Indian Period is the fluted spearpoint. It is slender, fairly thick and heavy, two to four inches long, of simple shape without stem or tang, and it has had a groove carefully chipped on each face. This groove was formed to grip the split shaft of the spear very firmly, so that the point could be glued and lashed very securely to the lance. Hunters of big game cannot take chances on a lance tip coming loose or twisting on its shaft in use, and the grooves were an important feature in the manufacture of a rigid lance. Their commonest tool was a planing blade or "end-scraper," with a beveled shaving edge at one end, probably used in shaping tools of wood and bone. The other ordinary tools were long side-scrapers with beveled edges tapering to a point, probably used in skinning game and tanning hides, and long, parallel-edged slivers of flint which were used as knives, probably in butchering. The only other tools found at the Shoop Site in Pennsylvania are chips with little points shaped on the edge; these were probably used in working bone, especially the manufacture of bone needles. All of these objects, which represent the total tool-kit which has survived decay, are chipped from flint, and none are made of other stones or formed by any other technique than chipping. These cutting and scraping tools are very much like those of later stages of the Old Stone Age in Europe and western Asia. They are especially like tools of a somewhat earlier period from the great grass-



CHANGES IN FLINT TOOLS DURING THE PALEO-INDIAN EPOCH

Idealized sketches of the major tools types from three stages of the Paleo-Indian Epoch. Top row are tools of the Early Paleo-Indian Period, based on data from the Shoop Site at Enterline, Dauphin Co., Pa. Middle row are tools of the Middle Paleo-Indian Period, based on data from the Bull Brook Site at Ipswich, Mass. Bottom row are tools from the Late Paleo-Indian Period, based on data from the Wilhelm Site in Lebanon Co., Pa., the Reagan Site at St. Albans, Vermont, and the Lindenmeier Site in Colorado.

The first column (left) are fluted spearpoints. The second column are side scrapers, used as skinning tools and spokeshaves. The third column are end scrapers, used as planing tools in shaping wood. The fourth column are knives. The fifth column are engraving tools or perforating tools and drills. Drawings not separated by a line are different views and sections of the same tool. Cross-sections are lined. The actual specimens are about five times as large as the drawings.

lands of the Ukraine, where ancient men also depended upon the mammoth for a livelihood. As far as we knew, they are the only record available of the earliest Pennsylvanians, and there are several reasons for believing that they are relics of the first settlement of this region.

Later Paleo-Indian cultures, both of Middle and Late periods, are known in the West and in other parts of the East, but only scattered traces of them have been found in Pennsylvania. The Folsom spearpoint, a small fluted point which has been studied most extensively at the Lindenmeier Site in Colorado, is the most widely publicized of these later tools, and is about ten thousand years old, by no means as ancient as many of the fluted spearpoints. Folsom points are not found in Pennsylvania, but certain smaller types of fluted spearpoints are here believed to be of about the same age. One of the most important projects of eastern archeology at the present time is the discovery and study of more of the places where Paleo-Indian peoples lived and left their tools and debris, and our studies of the ways of life in these ancient times have only begun in the last few years.

. . . *To Be Continued*

Two purple finches poised like ballet dancers as they disagree over which one should be served first at the feeder.

Below: A chickadee is "stopped" by the camera as it banks for a landing.



GRACE AND BEAUTY—BIRDS IN FLIGHT

The remarkable photographs reproduced on these pages are the result of patience, two years of experimentation, and skill. They were made by Mr. Crawford H. Greenewalt, a busy executive of a large industrial concern located in Wilmington, Delaware. Like many others, Mr. Greenewalt has found much pleasure and relaxation in the study of birds. But, unlike most, he has been unusually successful in capturing the natural beauty and grace of a bird's flight on film.



A white-breasted nuthatch is caught at 1/3,000th of a second.

Here's how these pictures were made: Bird food (peanut butter and sunflower seeds) is placed on a small wooden tray standing on a balcony outside an upstairs window. A piece of plywood covered with blue velvet simulates the sky. Two stroboscopic flash lamps provide illumination. A view camera with ground-glass focusing and flash-synchronized "compur" type shutter is used to take the photographs. As the birds fly to the feeding tray between the camera and plywood background, a photoelectric "tripper" sets off the camera trigger. The birds actually take their own pictures.



The Sequel to the Watch-dog Story

ALLEGHENY COUNTY — Last October 1953, I submitted an article that was carried in the GAME NEWS. It concerned a hunting dog named "Spottie," owned by Charles S. Sabo of Pittsburgh. "Spottie" had caught his foot in a trap and while trying to get the dog out of the trap "Spottie" bit his owner on the wrist and swallowed his watch. I finished the article by stating that, "Spottie" is doing fine in the hospital. Last week I talked with the owner of the dog and he told me this story: He watched the doctor operate on "Spottie" and take the watch, still ticking away, from the dog's stomach. Mr. Sabo thought at the time his dog would never run again. He took him from the hospital on the Monday before season started. With his stitches still in, the owner left him run an hour or so each day before season for exercise. On Thursday, the stitches were removed, and on the opening day of season the dog accounted for four rabbits for his owner. Mr. Sabo told me that "Spottie" is now a more cautious, careful and better dog than he was before.—District Game Protector F. H. Servey, Clinton.



It's Difficult to Get A Good Deer Down

ERIE COUNTY—A deer is an animal with an amazing amount of vitality and endurance. During the last part of December, a large buck was struck by a car and had both hind legs broken above the hock joints. I followed the buck tracks or drag marks through the brush and had very rough going for over two miles before finding him and ending his misery. The deer had traveled the entire distance by dragging his body with his front feet.—District Game Protector Elmer Simpson, Union City.

Scouts Show the Way

MERCER COUNTY—Some people who hunt and fish in Mercer County should feel pretty low after the Scouts of this area had to build stiles over fences so that the fishermen wouldn't break down the farmers' fences. At all parking areas and bridges the Scouts are putting out 50 gallon drums for garbage and trash that is left by hunters and fishermen. Also, the scouts will empty all such drums and will clean up what bottles, cans and what have you, the "I don't care" outdoorsmen neglect to put into the drums. It's getting pretty bad when boys have to follow men around and clean up after them. The Scouts only have one thing in mind. They want a place for themselves and their kids to hunt and fish when they grow up. —District Game Protector Arthur T. Biondi, Mercer.

There Were Three Little Pigs

ADAMS COUNTY—Edgar Leer, a cooperator on Farm Game Project No. 133, near York Springs, had been missing some young pigs recently.



There was no evidence of what happened to them. He started checking over his farm and not more than 100 yards from his buildings, he found a place that looked like a slaughter house. There was rabbit fur, duck and chicken feathers and several pigs lying near a hole. The next operation was on the hole with the pick and shovel. After several hours of hard work, he produced the remains of 3 pigs, 2 ducks, parts of rabbits and chickens, and at the end of the line, 7 red fox pups and the vixen. The old girl was certainly a good provider as the pigs weighed from 8 to 10 pounds each. Needless to say there will be no more damage done by that fox family.—District Game Protector John Spahr, Gardners.

Grilled Groundhog

SCHUYLKILL COUNTY—Deputy Game Protector, Joseph Derricott of New Ringgold reported that a man noticed that his car was heating up. Thinking that a paper had blown on his radiator he got out to pull it off; sticking his hand up under the grill of the car which he quickly withdrew. A groundhog had crawled up under the grill and was in the process of being nice and warm while hitchhiking a ride.—District Game Protector Billy A. Drasher, Tamaqua.

Black Panther?

GREENE COUNTY—On March 7, I received a call from Mr. Claire Bargerstock of Greensboro, R. D., in regard to seeing a panther near his home. Together, we investigated the area where the animal was seen. We saw some unusually large tracks on top of a brush pile and around some old mine entrances which were blanketed by a light snowfall. A month earlier I had a similar report in the vicinity of Mt. Morris on the West Virginia line. No killings of sheep or cattle have been reported which leads me to believe this animal to be a large roaming black dog.—District Game Protector, A. J. Ziros, Carmichaels.

Snow Clover

WARREN COUNTY—I got quite a kick one day, watching a groundhog feeding in a clover field. The odd part was that the clover field was covered with about four inches of snow. He would scratch down through the snow and get into the clover with no trouble at all. It didn't seem to bother him a bit. In fact he seemed to enjoy it and was very reluctant to leave when I walked closer to him. He sure looked odd out in that clover field.—District Game Protector William R. Overturf, Youngsville.





Emergency Landings

CENTRE COUNTY—A freezing rain during the night of March 29, 1954, on the top of the mountains in the Philipsburg area forced migrating birds (ducks) to stop their migration, come down, and sit out the bad weather conditions. Ducks were observed on almost every body of water in the area, even roadside ditches not more than four feet wide. Some didn't make the water, however. The glazed highways must have looked like nice streams to them. Fourteen that I have knowledge of won't go any farther on their northward migration — highway casualties. — District Game Protector Robert H. Sphar, Philipsburg.

Memories of the Past

McKEAN COUNTY—McKean County marked its 150th Anniversary on March 26, 1954. The McKean County Miner printed a number of interesting articles of days gone by, one was as follows: It is difficult to realize that a little more than one hundred years ago the largest item of expense for the year, excepting the extraordinary cost of building the Kendall road, was an item incurred yearly for the distribution of predatory animals as foxes, wolves, and panthers. As far as McKean County was concerned at that time, Penn's woods was still standing, much the same as when it had been owned by the Indians. The birds in the air, the fish in the streams, and the animals in the woods were much the same in numbers and kind as they were when the Senecas made this area their great hunting grounds. Their villages stretched from the Kinzua flats northeast to the Genesee River and the present site now occupied by the city of Rochester.—District Game Protector William H. Shirey, Smethport.

Iced Wings Down Grouse

ELK COUNTY—One rainy evening in February, I was returning from feeding my dog, which was tied above the house in the edge of the woods. I was using my flashlight to find my way as it was dark outside. The rays of the light shown on an object which I took to be a piece of glass. Upon examining the object, I found it to be a ruffed grouse. I picked up the bird and took it to the house to examine it. I could not find a thing wrong with the bird. I kept the bird in a crate in the celler until morning. The following day I took the bird out in back of the house and set it on the ground. It started up its motor and took off like nobody's business. Must have been forced down by iced wings.—District Game Protector Gerald D. Kirkpatrick, Portland Mills.

Greenhouse Makes Poor Landing Field

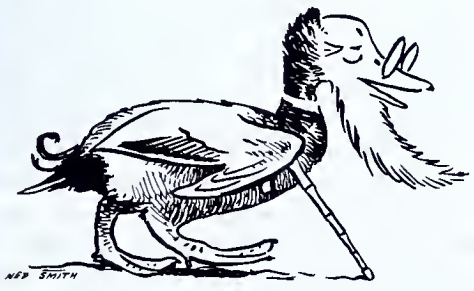
VENANGO COUNTY—I received a call one evening in early March from a Mr. Jerry Wessell of the Oakwood Rose Gardens in Oil City. Mr. Wessell states that he found a duck near one of the greenhouses and the bird seemed unharmed but unable to fly. I picked up the duck, which I identified as a redhead, and took it home where I fed it. The next day I released it on the Allegheny River where it took off without any apparent ill effects. It is my assumption that the bird was tired and figured on resting on the large greenhouse which it thought was a large body of water. —District Game Protector Leo E. Milford, Oil City.

Turkey Trot

FRANKLIN COUNTY—One of the highway maintenance men has been traveling a mountain road to and from work. One morning he saw a flock of 17 turkeys and got a very good look at them. On his way home the same evening, he saw the same flock of turkeys and measured the distance on his speedometer between the two points and it was nine miles. —District Game Protector Edward W. Campbell, Fort Loudon.

Duck Sets Old-Age Record

YORK COUNTY—Russell G. Haring, rural mail carrier at the Etters Post Office, usually brags of killing at least one duck each season and of course this past hunting season was no exception. The wild duck that he killed this past season wore a leg band numbered C-617405. As instructed on the band, Mr. Haring sent it to the Patuxent Research Refuge at Laurel, Maryland. In a recent reply from Seth H. Low, Biologist, Bird Banding Office, Laurel, Maryland, Mr. Haring was informed that the duck was banded 20 years ago. Mr. Haring states that he believes that the eating qualities improved with the age of the duck as he and his family thought it was delicious. The duck was killed on the Susquehanna River near Goldsboro.—District Game Protector Stephen C. Mace, Manchester.





Ringing Thanks

BERKS COUNTY—Sometimes a Game Protector is thanked for some small service rendered. Those thanks, though few and far between, help to make up for a lot of abuse that we also receive. Last March I guess I received my thanks for the year for the following incident: While working with Fish Warden Sickles one day, we stopped at Hopewell Park to check the draining of the dam. While I was walking in the swimming area where there was normally seven feet of water, I spied a ring lying in the mud. It proved to be a class ring from a Philadelphia High School with some initials inside. When I got home, I had my secretary (my wife) write the High School. The final result was that a young man had a lost ring returned. As his letter stated, he had spent a lot of time diving for the ring and finally gave it up for lost. His letter of thanks is the kind I would like to receive more often.—District Game Protector Samuel C. McFarland, Centerport.

Goose Guide

CLARION COUNTY—Ordinarily the report of a Knox sportsman seeing a duck of undetermined species leading a flock of wild geese north would have been taken with a grain of salt. But when several other persons reported seeing the same flock with a duck leading it, perhaps there is more truth than fiction to the story. — District Game Protector Donald M. Schake, Knox.



Waterproof Your Tent

The lead alum process described here is one of the safest and most practical home waterproofing methods.

By Warren Asa

Outdoor Photographer's League

NO one piece of equipment is more typical of camp than a tent. Your tent transforms any wilderness spot into a camp. Without the tent—well it just doesn't seem like a real camp. However, no other piece of equipment can make a camper quite as miserable as a leaky tent. There is no reason for your tent to leak, because several home waterproofing methods can be used to treat it. Of all these methods one of the best is the lead alum process.

The lead alum process has many advantages over other waterproofing methods. No dangerous combustible substances such as gasoline or turpentine are used in this process. Then too, the lead alum process leaves a tent fire resistant whereas many of the oil or wax waterproofing systems leave a tent in a highly combustible state. This is especially important if the tent is to be used with an open front before a fire.

The two chemicals required for this process can be purchased from your druggist, so everyone has a local supply. These chemicals are fairly inexpensive and easy to mix. The thing that back-packers will like about the lead alum process is that it adds practically no weight to their tent. Another advantage of this method is that it allows the tent material to "breathe." This means there is a constant change of air in the tent even with the flaps closed. A constant change of air means, not only fresh air, but also no moisture condensa-

tion on the walls of the tent. Moisture condensation can become a real problem in winter camping because it freezes on the inside of the tent. The lead alum process can also be used to treat tightly woven cotton clothes, such as poplin jackets, to make them shed water.

At this point you may be completely sold on the lead alum method of waterproofing; I hope you are. You may even be wondering why anyone ever uses any other system. The lead alum process works best on small tents constructed of tightly woven material. It is not very satisfactory for use on large tents made of coarsely woven material. Tents that have previously been treated with oil or wax can not be waterproofed by the lead alum process until all of the oil or wax has been removed, and that is almost impossible to do. Lastly you should know that after considerable use your tent will have to be waterproofed again. However, no waterproofing method that I know of is completely permanent.

There you have the advantages and disadvantages of the lead alum process. For many tents it is the ideal waterproofing process. If it meets your needs, get your tent and we will proceed to make it ready for some real camping.

The amounts of chemicals used here will treat 60 to 70 sq. ft. of material. This amount will do nicely for a pup tent or a trail tent such as the one shown here. If your tent is larger increase the amount of chemicals accordingly.

Purchase ½ pound of alum and ½ pound of sugar of lead (lead acetate) from your druggist. This will cost about 90 cents. Sugar of lead is a poison so don't get it near your mouth. Next, rinse your tent to remove all sizing and allow it to dry. To be sure of doing a good waterproofing job you must use very soft water. The best way of doing this is



Photo by the author

A little know-how and two chemicals are all that is needed for waterproofing with the lead alum process.

to collect rainwater. You will need four gallons. Heat the rainwater and put two gallons of this hot water in each of two containers. Dissolve the alum in the hot water in one container, and the sugar of lead in the other.

When the two solutions are clear, add the sugar of lead to the alum. Allow this solution to stand for a few hours, until it is perfectly clear. Then pour the clear solution into a clean container, that is large enough to hold the liquid plus the tent.

Place the tent in this solution and work it with your hands until every inch is wet. Let the tent remain in the solution overnight. In the morning erect the tent and let it dry. A white powder may remain on the tent. This will do no harm and will wash off on your first rainy camping trip.

There you have the completed lead alum process. It is not difficult, but it is important to follow the instructions carefully. When you are camping in rainy weather be sure and ditch your tent before the rain starts, and don't touch or rub the inside of your tent. Happy camping to you—come rain or shine.



Bird Dog of the Year

By Marc J. De Berti

TO Puckety Village Boy, hard-smashing pointer dog owned by Edgar McKean, Pittsburgh, and handled by Gene Galloway, Marienville, goes the high honor of being "Pennsylvania's Bird Dog of the Year." He won the accolade on March 27th when he successfully defeated 19 of the greatest grouse dogs in the country at the Pennsylvania Open Grouse Championship, at Marienville.

Puckety Village Boy is not a newcomer to the winner's column. This handsome pointer has been in the limelight for several years and his name is to be respected anytime he is entered in competition. Last fall "Boy" captured the Grand National Grouse Dog Championship run at Gladwin, Michigan, and at that time we predicted this dog was in for a brilliant career among the nation's grouse dog greats. In March, 1954, this prediction came true as "Boy" rose to great heights in capturing the event that bird dog men consider one of the toughest assignments any dog can be asked to conquer.

The stylish-moving pointer succeeds Sam L's Hadaway, a fancy-running, little black and white setter. This setter set the field trial world agog when he captured the New England Bird Dog Championship in 1952, then came forward to capture the Pennsylvania Open Championship in the spring of 1953. Even last spring Puckety Village Boy made a strong, valiant bid for this title but Lady Luck was not with him and the title eluded him temporarily. This spring,

however, in a truly brilliant exhibition of stamina, handling ease, the bird finding ability, he demonstrated to the rest of the Grouse Trial world that he was not to be denied.

It was a slashing performance that "Boy" put forth to defeat the 18 other competitors. All told, 13 setters and six pointers were entered. The dogs ran under trying conditions that left sore muscles, cut and bleeding pads. But these great grouse dogs are bred to stand punishment. They are a distinct credit to their owners, breeders and particularly to their handlers.

This is not the first time that Gene Galloway has had the honor and thrill of winning this great championship. In fact, Gene possibly holds a record for winning the event since he has piloted four different dogs to the top. Many grouse trialers and hunters remember Galloway's brilliant wins with the setter Skybandit in 1943. Three years later he repeated his triumph with the three-time champion setter, Hall's Black Rocket. In 1951 he again caputred the title with Skyrocket Pride's Hank and now in '54 wins again with the white and liver pointer. This is indeed an impressive record for a dog trainer who left a position in a bank to literally go to the dogs.

In almost every field trial, particularly the more important ones, some of the dogs do the unexpected. There was Trebor's Duchess, a two-time grouse dog champion, who failed to make the turn around the sidehill and was not picked up for over half an hour. There was the pointer bitch, Doc's Girl Sis, who pointed facing an old burned-out pine stump. When her handler failed to flush, he grabbed Sis by the collar and moved her away. Circling, Sis came back and placed her feet on the stump, digging furiously and eventually coming out with a mouthfull of tail feathers from a badly frightened cock grouse. This was one time when the handler out-smarted



Puckety Village Boy, Grand National Grouse Champion, has impressed all who have seen him with his honesty of purpose, his prowess as a bird finder, and his style both in action and on point.

himself. There was Michigan Rodfield, a handsome and brilliant setter out of the Michigan woods who found himself in the midst of a thunder and lightning shower. It was just too much for the dog and he came to heel and had to be taken up. Of course, all these incidents are just part of this great game of grouse dog field trialing. They are some of the pertinent reasons why it takes good losers and even better winners to stick in there and enjoy this grand sport.

It was no push-over for Boy to capture this hotly contested event. Without any great stretch of the imagination, several other dogs might have very easily traded places with the winner. Here's how it happened.

Puckety Village Boy concluded his grueling two hour heat in fine form. His finish was just as strong, if not stronger, than his start. From the breakaway, Boy went to work. There was no pussy-footing or ground scenting in this dog's makeup. With a high head and cracking tail, he reached to all appealing birdy cover. His casts were not in vain and at the end of his two hours, the tally sheet showed one excellent point on grouse, a perfect honoring point of his bracemate's find, another clean-cut point—on a lonesome pheasant, and a point where no bird was produced. However, on this point Boy was found after an extended search of about ten minutes, styled up behind large boulders. How long he had been there is not known but it was evidently long enough that his game had gone.

Possibly the dog next in line and running right behind Boy's heels was Retina, a setter bitch from the pine woods of Michigan. Had Retina finished her second hour as strong as her first, she would probably have been declared the Champion. The setters Sam L's Elias, owned by Sam Light of Punxsutawney, and Orchard Valley Skylight, owned by Robert Habgood of Bradford, did the owners and handlers proud by their performance. There were also such dogs as Flashlight's Big Ben, Tancan Hoosen Hunter, Technic, Sam L's Hadaway, Puckety Country Boy, Skybell's Brownie, Glencrest Taffy, Milmac's Blondie, Skygo's Nugym, Puckety Village Girl, Doc's Tristum, Larray—youngsters that will always be in there fighting and should be heard from in the future.

But above all it was gratifying to note the interest of many old-time grouse hunters, many of whom have owned fine shooting dogs. All these men were here to follow their favorites and compare the exhibitions of these championship caliber dogs with that of "Old Joe," their faithful hunting companion.

Thus ended the 1954 Open Pennsylvania Grouse Dog Championship. It was a grand and thrilling event—a weekend fully replete with good and exciting memories of what makes a high-class grouse dog, with the lore of the gun as the measuring stick for all to see. There was warm hospitality, good fellowship, and most of all the outdor cathedrals of Mother Nature—walking through good grouse cover with the smell of aspen buds in your nostrils and the sight of whirring brown wings bursting from small patches of greenbrier. And last, there was the work of great grouse dogs, particularly the hair-raising work of the "Grouse Dog of the Year."

. . . *The End*

Most birds are voracious eaters. Young crows are accustomed to consume at least half their own weight a day and have been known to eat their full weight. A young robin, shortly after leaving its nest, is known to have eaten 14 feet of earthworm in one day.

• • •

Insects have no lungs. They breathe through tubes running all through their bodies.

Federal Aid In Wildlife Restoration —

SOUTHWESTERN PENNSYLVANIA



Contour farming is proper land use.

The following article, fourth in a series of six, is the result of combined effort and teamwork. Field data and reports were compiled by E. R. Richards, Land Utilization Assistant, and Gilbert L. Bowman, Pittman-Robertson Area Leader, of the Southwest Division. The article was prepared for publication by Division of Land Utilization personnel at Harrisburg. Photos by Commission photographers.

REALIZING the need for increased wildlife research and development activities throughout the United States, the Federal Aid in Wildlife Program was inaugurated on July 1, 1938. Under this legislation, known as the Pittman-Robertson Act, Wildlife Research and Restoration Projects are approved in various states, and Federal funds provided to finance seventy-five percent of the costs. (Expenditures for wildlife protection, general departmental administration, propagation and stocking of game are not allowable under terms of the Act.) Programs are financed from excise taxes imposed on sale of firearms and ammunition. Each state receives a proportionate amount of this fund, dependent upon number of licenses sold and the state acreage compared to the whole of the United States.

From 1938 to 1947 receipts from these Federal taxes were limited, and projects were confined largely to purchase of hunting lands and research problems.

In 1948 the Pennsylvania Cooperative Farm Game Program was expanded and a Pittman-Robertson Project approved to conduct the work. Since 1949 development of State Game Lands and other leased areas has also been partly financed with these monies. All activities receive prior approval and periodic inspection by personnel of the United States Fish and Wildlife Service.

Due to increased interest shown by sportsmen and conservationists in activities within the Keystone State, this

article is written to acquaint them with the use of Federal Aid funds, and the accomplishments in wildlife restoration throughout Southwestern Pennsylvania, which includes Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland Counties.

Acreage owned and controlled by the Commission in this portion of the state includes 68,721 (slightly less than eight percent) of the 902,179 total acres of State Game Lands; 184,037 (over seventeen percent) of the 1,048,145 total acres of Cooperative Farm Game Projects; and 7,759 (slightly less than seven percent) of the 111,819 total acres of other projects throughout the State.

Federal Aid funds have helped finance the acquisition of many State Game Lands. In the Southwest Division acreages in various counties were purchased as follows:

Beaver	872.0	Acres
Cambria	6,836.7	"
Greene	1,067.6	"
Indiana	4,127.2	"
Somerset	192.0	"
Washington	666.1	"
	13,761.6	"

Prior to acquisition all areas were checked and approved by employes from the United States Fish and Wildlife Service.

In addition to these acreages, the Commission has entered into long term leases with the United States Government to manage wildlife on the Loyalhanna and Conemaugh Flood Control Reservoir lands in Westmoreland and Indiana Counties. Of the total acres included in these management licenses, a large portion

Waterfowl foods have been planted along the shoreline of Cranberry Glade Lake in Somerset County. Located on State Game Lands, this impoundment provides many hours of enjoyment for local sportsmen.



will never be flooded, and much that is below the high water level will only be covered by water for relative short periods of time. Funds under existing Pittman-Robertson Projects are being applied to study practical research problems, and for the development of improved food and cover for wildlife on the reservoir units. Local sportsmen hunt the lands quite heavily, and from field checks by research employes the annual kill is relatively large.

Although State Game Land acreage in this division is small compared to lands leased under the Cooperative Farm Game Program and additional active projects, the utilization of state owned tracts has been most gratifying. Each year representative sportsment have accompanied Game Commission personnel on prearranged inspection tours of the separate Game Lands. Certainly these trips, and the resulting explanation of various food and cover activities, have done much to acquaint club members and other hunters with the scope of wildlife restoration under the Pittman-Robertson Program.

State Game Lands support practically all species of wildlife. In the more mountainous areas of Cambria, Westmoreland, Somerset and Fayette Counties, it has been particularly satisfying to observe definite increases in the wild turkey population. Much credit for these additional flocks of the traditional Thanksgiving bird can be given to the restoration program.

Food and cover for all upland game was improved on State Game Lands and leased areas by creating additional forest openings, planting grains and various clovers on cleared areas, improving succulent clover growth along field edges by periodic mowing, felling overshadowing tree growth along edges of fields and woodland borders, releasing of fruit trees and clumps of grape vines and



Cooperating farmers plant thousands of evergreen seedlings, thus providing essential food and cover areas for wildlife.

State Game Lands in the wooded section of southwestern Pennsylvania have been improved as habitat for wild turkeys by planting small grains and clovers at desirable locations.





Spoil banks on State Game Lands in Washington County have been revegetated by planting evergreen seedlings and transplants. The resulting growth has been beneficial in stabilizing the soil and providing game food and cover.

game food producing shrubs by felling large timber, planting evergreens and berry producing shrubs along hedge-rows, ravines, steep slopes and odd corners of marginal field areas. Where conditions warranted tree seedlings were planted following lumbering operations, or underplanted on relatively open tracts of woodland. Farming marginal fields and clearings in forested areas not only provides grains and succulent greens, but openings and abundant insect life required by wild turkeys, ruffed grouse and ringnecked pheasants.

Federal Air funds have helped finance the construction and maintenance of access roads to various wildlife development areas on State Game Lands, essential if food and cover is to be retained over the years.

Each year more sportsmen are enjoying the freedom of hunting over large acreages of State Game Lands. Here there is no trespass problem —just a code of fair sportsmanship and due regard for Game Laws.

On a few tracts wet areas have been improved for migratory waterfowl by creating small ponds or potholes. Waterfowl foods such as floating duckweed, wild duck millet, smartweed and various acquatic tubers were introduced and the work financed with Pittman-Robertson funds. Of special interest to sportsmen in the Southwest Division was the completion of Cranberry Glade Dam on State Game Lands #111 near Confluence. Although the construction of this impoundment was not financed with federal funds, the development of aquatic plants and other food and cover along the shoreline has been accomplished with the

(Continued on Page 35)

STATE GAME LANDS—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
January 1, 1949 to December 31, 1953

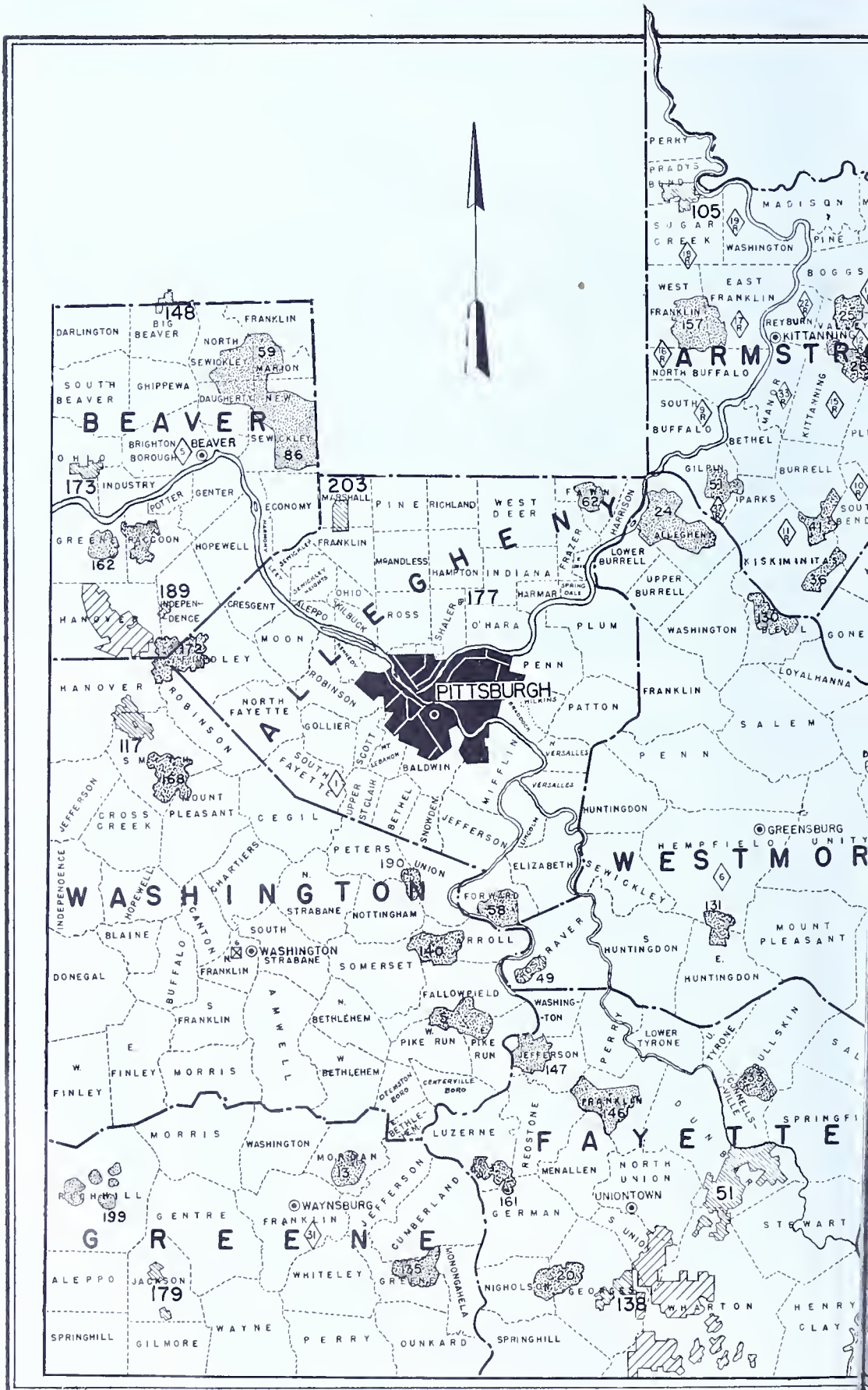
County	Food Strips			Equipment	Seedlings		Forest Cuttings			Fruit Trees	
	Cleared Acres	Planted to Grains Acres	Seeded to Clovers Acres	Maintained in Sod Acres	Roads Serviced Miles	Evergreens No.	Others No.	Release Acres	Border—Edge Width* Ft.	Border—Edge Length Ft.	Released No.	Pruned No.
Allegheny	13.0	95.0	7.0	22.0	8.0	11,990	20,880	15.0	45	12,600	568	180
Armstrong	72.0	412.0	109.0	268.0	9.0	21,900	87,760	34.0	35	38,140	3,014	968
Beaver	93.0	216.0	47.0	311.0	33.0	7,550	43,290	10.0	28	8,950	2,590	1,196
Cambria	34.0	183.0	78.0	86.0	26.0	58,156	92,350	5.0	35	9,550	44,430	7,923
Fayette	6.0	46.0	31.0	21.0	1.0	3,550	12,090	228.0	43	18,620	136,765	2,036
Greene	123.0	177.0	55.0	309.0	3.0	48,500	41,350	17.0	55	4,270	1,201	384
Indiana	13.0	96.0	19.0	71.0	9.0	23,100	27,150	20.0	28	4,120	710	300
Somerset	65.0	197.0	102.0	231.0	24.0	22,786	42,530	204.0	33	27,896	2,187	826
Washington	20.0	168.0	65.0	191.0	8.0	47,415	25,600	27.0	30	25,550	5,986	1,460
Westmoreland	36.0	150.0	42.0	99.0	32.0	500	33,842	61.0	50	1,275	781	372
Totals	475.0	1,740.0	555.0	1,609.0	153.0	245,447	426,842	621.0	38*	150,971	198,232	15,645

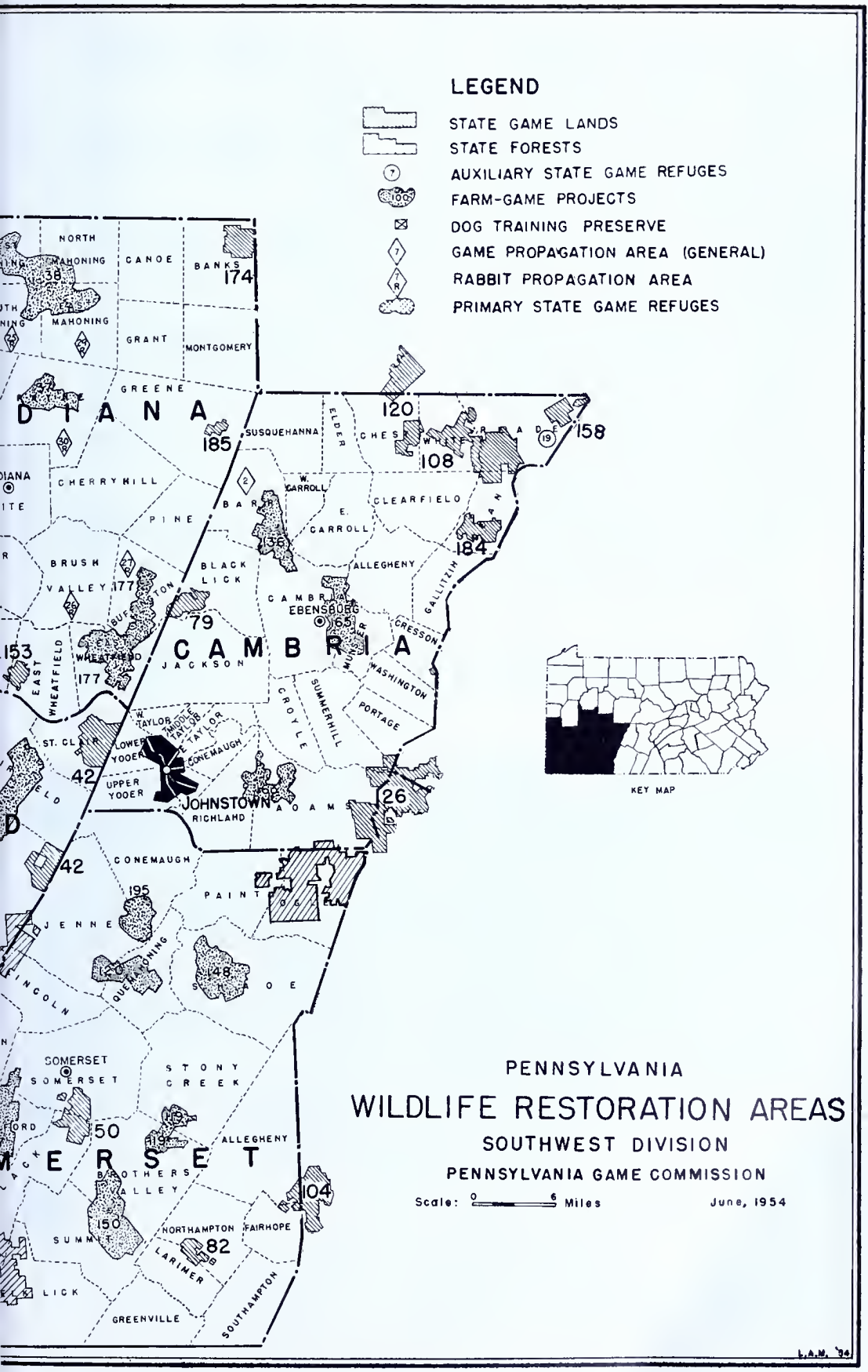
MISCELLANEOUS

Beaver .....Two small ponds or potholes established for waterfowl.
Greene .....Two small ponds or potholes established for waterfowl.
Somerset ....Eighty (80) pounds of duck food planted & two potholes established for waterfowl.
Washington ....One pond area improved for waterfowl.
Westmoreland ..Small shrub nursery maintained. Furnished portion of seedlings.

* Average.

Note: Food strips were planted following approved practices.
Strip cropping and planting on contours, use of diversion ditches and retention of sod waterways were soil conservation principles applied on crop areas.


PERRY
PRADYS BND
105
MADISON
SUGAR CREEK
WASHINGTON
PINE
BOGGS
WEST FRANKLIN
EAST FRANKLIN
157
REYBURN
KITTANNING
ARMSTR
NORTH BUFFALO
SOUTH BUFFALO
MANOR
BETHEL
GILPIN
BURRELL
PARKS
SOUTH BEND
148
BIG BEAVER
FRANKLIN
DARLINGTON
NORTH SEWICKLEY
59
MARION
SOUTH BEAVER
GHIPPEWA
DAUGHERTY
NEW SEWICKLEY
BEAVER
BRIGHTON
BEAVER BOROUGH
SEWICKLEY
86
OHIO
173
INDUSTRY
POTTER
CENTER
ECONOMY
203
MARSHALL
PINE
RICHLAND
WEST DEER
FAWN
62
HARRISON
24
ALLEGHENY
51
GREEN
RACCOON
162
HOPEWELL
FRANKLIN
McCANDLESS
HAMPTON
INDIANA
FRAZER
LOWER BURRELL
UPPER BURRELL
KISKIMINITAS
41
36
189
INDEPENDENCE
CRESCENT
ALEPPO
OHIO
WILBUCK
ROSS
177
HARMAR
SPRING DALE
SHALER
O'HARA
PLUM
130
WASHINGTON
GONE
HANOVER
172
MOON
KENNEDY
PENN
LOYALHANNA
ROBINSON
PITTSBURGH
WILKINS
BRADDOCK
PATTON
FRANKLIN
SALEM
NORTH FAYETTE
GOLLIER
ALLEGHENY
VERSAILLES
117
SOUTH FAYETTE
SCOTT
MT LEBANON
BALDWIN
MIFFLIN
158
MOUNT PLEASANT
JEFFERSON
CROSS CREEK
CECIL
BETHEL
SNOWDEN
JEFFERSON
LINCOLN
HUNTINGDON
GREENSBURG
HEMPFIELD
UNITY
WESTMOR
PETERS
190
UNION
ELIZABETH
SEWICKLEY
6
INDEPENDENCE
HOPEWELL
CHARTIERS
N. STRABANE
NOTTINGHAM
FORWARD
58
131
WASHINGTON
BUFFALO
CANTON
SOUTH STRABANE
CARROLL
140
S HUNTINGDON
MOUNT PLEASANT
BLAINE
WASHINGTON
STRABANE
E. HUNTINGDON
DONEGAL
FRANKLIN
SOMERSET
49
FALLOWFIELD
WASHING-TON
S FRANKLIN
N. BETHLEHEM
PIKE RUN
PERRY
LOWER TYRONE
JEFFERSON
147
ALLEGHENY
W. FINLEY
FINLEY
MORRIS
W. BETHLEHEM
DEEMSTON BORO
CENTERVILLE BORO
FRANKLIN
146
TYRONE
CONNELLSVILLE
SPRINGFI
MORRIS
WASHINGTON
LUZERNE
FAYETTE
MONTGOMERY
13
MENALLEN
NORTH UNION
UNIONTOWN
51
REDSTONE
JEFFERSON
CUMBERLAND
161
GERMAN
STEWART
199
GENTRE
WAYNSBURG
FRANKLIN
31
GREENE
ALEPPO
JACKSON
179
WHITELEY
135
GREENE
MONONGAHELA
NICHOLSON
20
GEORGES
138
WHARTON
HENRY CLAY
SPRINGHILL
GILMORE
WAYNE
PERRY
OUNKARD
SPRINGHILL


LEGEND
STATE GAME LANDS
STATE FORESTS
AUXILIARY STATE GAME REFUGES
FARM-GAME PROJECTS
DOG TRAINING PRESERVE
GAME PROPAGATION AREA (GENERAL)
RABBIT PROPAGATION AREA
PRIMARY STATE GAME REFUGES
KEY MAP
PENNSYLVANIA
WILDLIFE RESTORATION AREAS
SOUTHWEST DIVISION
PENNSYLVANIA GAME COMMISSION
Scale: 0 6 Miles
June, 1954
CAMBRIA
JOHNSTOWN
EBENSBURG
SOMERSET
L.A.W. '54

OTHER LEASED AREAS—(Propagation Areas—Rabbit Farms, etc.)—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
January 1, 1949 to December 31, 1953 SOUTHWEST DIVISION

County	Food Strips: Planted to Cleared Acres	Food Strips: Seeded to Grains Acres	Food Strips: Seeded to Clovers Acres	Food Strips: Maintained in Sod Acres	Plots: Purchased No.	Plots: Purchased Acres	Seedlings: Evergreens No.	Seedlings: Others No.	Forest Cuttings: Release Acres	Forest Cuttings: Border-Edge Width Ft.*	Forest Cuttings: Border-Edge Length Ft.	Fruit Trees: Released No.	Fruit Trees: Pruned No.
Allegheny	....	1.0	....	1.0	52	13.0	....	....	....	....	....	....	....
Armstrong	12.0	10.0	....	46.0	15	6.0	10,700	33,500	....	25	77,470	180	180
Beaver	....	....	....	....	13	3.0	....	....	....	....	....	....	....
Cambria	....	....	....	....	66	13.0	....	....	....	....	....	....	....
Fayette	....	....	....	....	45	8.0	....	....	....	....	....	....	....
Greene	....	....	....	....	37	10.0	....	....	....	....	....	....	....
Indiana	1.0	4.0	....	20.0	152	25.0	5,800	7,250	5.0	25	12,850	....	....
Somerset	....	....	....	....	109	18.0	....	....	....	....	....	....	....
Washington	3.0	8.0	2.0	....	2	1.0	500	....	....	....	....	454	205
Westmoreland	....	....	....	....	48	17.0	100	112	....	....	....	....	....
Totals	16.0	23.0	2.0	67.0	539	114.0	17,100	40,862	5.0	25*	90,320	634	385

* Average.

COOPERATIVE FARM-GAME PROJECT PROGRAM—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
January 1, 1948 to December 31, 1953 SOUTHWEST DIVISION

County	Leased: Farms	Leased: Acres	Safety Zones Established Dismantled	Refuges Established Maintained	Food Strips and Nesting Cover: Strips	Food Strips and Nesting Cover: Acres	Contour Strips Acres	Seedlings Planted: Coniferous	Seedlings Planted: Multiflora Rose	Seedlings Planted: Other Species	Wildlife Borders Developed Lin.Ft.Cut
Allegheny	69	6,526	381	3	96	21	.....	47,150	15,795	.....	.....
Armstrong	194	20,443	1,667	31	363	102	623	237,800	72,600	1,375	36,425
Beaver	161	16,315	1,173	9	229	52	274	124,575	46,850	1,253	14,200
Cambria	122	15,367	518	3	80	19	.....	121,075	34,350	3,760	21,050
Fayette	144	18,272	825	9	421	88	99	102,200	141,450	780	.....
Greene	73	9,291	394	5	54	11	.....	63,400	145,800	.....	.....
Indiana	205	22,110	1,314	16	911	220	314	257,400	87,775	1,430	2,100
Somerset	208	30,521	1,047	18	603	119	250	140,900	64,655	925	30,400
Washington	127	14,261	683	16	144	28	.....	85,630	64,800	.....	2,800
Westmoreland	152	15,933	793	15	269	70	60	141,300	72,150	6,440	7,925
Totals	1,455	169,039	8,795†	125*	3,170	730	1,620	1,321,430	746,225	15,963	114,900

* All Refuges are maintained the entire year.
† All Safety Zones are erected prior to the beginning and dismantled after close of the Hunting Season.

(Continued from Page 30)

aid of these monies. Thousands of sportsmen are acquainted with this area and the restoration program.

Much has been said regarding the reclamation and revegetation of areas strip mined for coal. In Pennsylvania, it is acknowledged that the pioneer work on planting these rough areas of subsoil and rock was done on State Game Lands #117 in Washington County. Plantings of Red Pine, Banks Pine and many other tree and shrub species after excavation not only revegetated an otherwise barren waste, but established the basic food and cover conditions necessary to provide habitat for various wildlife species. A continuation of the original seedling planting program on the stripped area and the establishment of grains, clovers and other wildlife foods on adjoining fields is partly financed with Federal Aid funds.

Other areas which were developed for wildlife with the aid of Pittman-Robertson funds include Rabbit Farms, Propagation areas and Dog Training Preserves. These were developed primarily to benefit small game species, following practices previously explained. However, the activities most fruitful were the seeding and mowing of narrow clover strips adjoining brushy fence rows, creating of very large brush piles, cutting overshadowing trees along woodlot edges to produce sprouts and shrub growth, releasing fruit trees from overshadowing tree growth, and the pruning of apple trees during winter months.

Woodland borders on Farm-Game Projects and Rabbit Farms are improved for wildlife by cutting the larger trees along field edges. A dense growth of shrubs and vines provides protective cover. Many kinds of berries and fruits become available for various game birds and animals.



Leasing, mapping, establishing and developing of Cooperative Farm Game Projects are partly financed with Federal Aid Funds. The program involves the leasing of farms from landowners under a five year agreement. In return for the privilege of keeping the farm open to public hunting, provisions are made to protest an area within 150 yards of their buildings by posting with safety zone signs and giving the necessary protection. Food and cover for wildlife is improved with the cooperation and permission of landowners.

The advantages and success of these Cooperative Farm Game Projects are widely acknowledged. Expansion of the program with the help of Pittman-Robertson funds has been extensive. Of the 184,036 acres now under agreement in this field division, 169,039 were leased and mapped with the aid of these monies. Most of the projects are moderate in size, with a total of 52 scattered throughout the ten counties located within the division. Only one project, located in Indiana County, exceeds 10,000 acres. More than fourteen hundred farms were added during the six years of operation with Pittman-Robertson funds. The statewide program consists of 10,383 farms containing 1,048,145 acres.

Wildlife development is an important part of this program. Over 2,000,000 seedlings were distributed to cooperating farmers and planted along steep slopes, odd corners and at other locations not adaptable to agriculture. Over 100,000 linear feet of woodland borders were improved for wildlife by cutting the overshadowing tree growth for a width of approximately 30 feet along the edges. Technical assistance was rendered to cooperators in establishing conservation practices. As an incentive to encourage use of cover crops beneficial to wildlife, these landowners were given over 121,000 pounds of ryegrass seed for planting after the last cultivation of corn. In addition, a total of 129 pints of crow repellant were distributed in an effort to reduce corn seed damage by crows and blackbirds.

Tables of accomplishments on all game restoration areas outline the actual development for wildlife in Southwestern Pennsylvania under the Pittman-Robertson Act. Locations of various project areas are more specifically indicated on the map which is printed as part of this article. Practically all lands have been improved by the application of one or more of the practices previously mentioned.

This is the fourth of a series of articles on each Commission field division, reporting to sportsmen and conservationists how Pittman-Robertson money has been and is being spent in an effort to maintain and improve wildlife conditions. It is hoped that these articles tell what is being done and where you as a sportsman can go personally and observe this management work.

. . . The End



'Chuck Hunting Equipment

By Robert S. Bell



FIVE years ago a 'chuck hunter could spend half a dozen evenings in pursuit of his favorite targets without seeing another person similarly occupied. Now, in one summer afternoon, he's quite likely to meet a dozen heavily armed snipers toting heavy barreled, scope sighted wildcat outfits with only one thought in mind —killing a whistle-pig at a longer distance than anyone else.

We don't have any quarrel at all with this type of fellow. We like to hunt this way and figure it's the right of everyone else to do likewise if he wishes. Neither do we dispute his choice of weapons—provided it's a caliber powerful enough to give clean kills over normal hunting distances, which it almost invariably is. The large number of informative articles written by the gun editors of the various outdoor magazines is probably largely responsible for this situation. But rarely is anything else in the way of hunting equipment mentioned in any articles so for the novice who is just getting started in the game we offer the following suggestions for what they are worth.

Clothing

While it is possible to go 'chuck hunting in a swimming suit, it should be readily apparent that this wouldn't be the best selection. Neither would a tuxedo. The choice evidently lies somewhere between the two extremes.

Since 'chuck season comes in summer it eliminates all heavy warm clothing from the list and so, starting at the inside and working out, as Kephart wrote, we skip the wool underwear of deer season and wear regular cotton shorts and shirts. (The color doesn't matter a darn since the 'chuck won't see them anyway!) Over these we wear trouser type overalls. They're tough and can take a beating in the brush when necessary. They're also noisy in brush but this is of no great consequence as we don't try to get close to a 'chuck, preferring at least 200 yards of pasture or meadow between us. Not that this animal is dangerous. We just don't like to slaughter them at close range.



We've seen some 'chuck shooters, probably either confirmed small bore gunners or those influenced by that clan, who wore regulation padded shooting jackets while in the field. They give excellent protection to the elbows, of course, but seem rather affected here. Our own preference is for an old GI fatigue jacket with elbows padded by pieces of sheepskin. The dark forest green color is inconspicuous and won't give you away while squatted in a brush row glassing a field. If it gets a little dirty so much the better—provided you can keep your wife from seeing it. It should be a loose, baggy fit so it won't bind when sprawled in a prone position.

As for hats, when we wear one in summer we prefer a broad-brimmed straw hat as it's cool and keeps the flies from buzzing 'round one's ears. It also shades the eyes and keeps the back of the neck from getting too sunburned. More important, it breaks up the outline of the head, which sometimes resembles a 'chuck when seen from a distance, as it appears above a pile of rocks. If there are many hunters around it is advisable to tie a piece of brightly colored cloth to the crown just to be on the safe side. Even a moron should realize a 'chuck won't be waving a yellow handkerchief at him.

Leaving the hats to the top end we drop to the bottom and get to the boot business. If you're going to get out of the car and off the roads to do some shooting, and it's usually more fun to do so, you're going to have to walk. Probably any sturdy shoe will do for the job but some are better than others. We prefer to wear boots as they give better protection to the legs in the brush and in the summer there are also snakes to consider.

Some hunters wear their leather-topped rubbers all year round but, much as we like them in deer season, we find them too hot in the summer, the rubber causing excess sweating and leading to athlete's foot. Better than these are the GI combat boots which wear like iron and aren't too expensive at Army-Navy stores.

Best of all are the all leather boots of the 'bird-shooter' type as made by Bass, Bean, Russell and others. Of moccasin construction with composition soles which provide good footing almost everywhere and tops about nine inches high, they are ideal for summer foot-wear. They are light in weight but give protection to the leg without coming high enough to bind on the leg muscle. They're fairly expensive but last a long time. We wear light weight wool socks with all of them and sprinkle foot powder in, too. It helps a lot in hot summer weather.

Optical Accessories

At the top of the list, for our money, is a good pair of shooting glasses. This is an item too often ignored by the beginner who is usually too wrapped up in a study of ballistics, hand-loading, etc. to think of everything. But, with the

ever-present possibility of a blown primer, gas leak or even a separated cartridge case, any of which may occur with the high-pressure cartridges used by many 'chuck hunters, a top grade pair of heat-treated shooting glasses is an absolute must. They'll give protection against gas blown back through an action or even small pieces of brass which could easily ruin an eye. Buy them and *wear* them 'cause if you shoot long enough you're eventually going to pop a primer and get gas back in your face and they won't do you a bit of good lying back in the gun cabinet! We're only issued one pair of eyes in this world and no replacements so take care of them. A good pair of shooting glasses may cost fifteen or twenty bucks but they'd be cheap at twice that much. They can be ground to your prescription, too, if you normally wear glasses and they also serve as sun glasses. We prefer the dark green shade for outdoor use. They're a big help when driving in bright sunlight, also.

Next on the list is a good pair of binoculars. These are an absolute necessity for anyone who wants to kill many 'chucks. A number of times I've gone out without mine, thinking I could use the rifle 'scope to study anything I couldn't identify with the naked eye, and every time I cursed my stupidity and swore never to do it again.

For 'chuck hunting glasses of 6x30, 7x35, or 7x50 will be the most useful sizes with larger glasses getting on the heavy, bulky side. For 'chucks alone we prefer the 7x50 size but if we must use one pair for both 'chucks and deer we would take a good pair of 7x35's. In these numbers, the first numeral is the magnification and the second the diameter of the objective lens in millimeters.

Many hunters buy binoculars solely on the basis of magnification, but power without definition is worse than useless. To get good definition —the quality of being able to make out detail in whatever is being studied—with high magnification, we need large lenses. And large lenses run the price of binoculars up. So decide what power will best suit your average needs then buy the best pair of glasses you can afford in that series.

Good light transmitting power is also of top importance and also depends on the power and size of lenses; the larger the objective lens the higher the light transmitting power normally is. A rough way of comparing this feature in binoculars or scopes is to divide the size of the objective lens in millimeters by the power and square the answer. Thus, in a 7x35 glass, we divide 7 into 35 and get 5. This is the diameter of the exit pupil in millimeters. Five squared is 25. This number means nothing except as a means of comparing different glasses and is not exact due to different optical systems. But by using it we can readily see that a 7x50 glass has almost twice as much light transmitting power as a 6x30 or 7x35. However, the pupil of the human eye rarely exceeds five or six millimeters in diameter and thus is able to absorb a light ray only that large, the excess being wasted except



under very abnormal circumstances such as might occur in late evening or even in moonlight. No glasses are very satisfactory then but the bigger the lenses the better.

Like everything else that is worthwhile, binoculars are expensive. But they will last a lifetime if given any sort of care and you can't wear them out looking through them. So buy the best you can afford and get them from a reliable maker who will stand back of his product. You will be using them constantly the year 'round so don't get a cheap pair that won't stay in alignment or that isn't moisture proof for they're more trouble than they're worth and you'll be just as well off without any.

As for using them, the biggest requirement is patience. When you approach a field you want to study give it a quick run over with the naked eye. Often a 'chuck will be sitting out in plain sight. If you locate any this way let them go for a minute if they're not frightened and see if you can locate any more before firing. It will give you a better idea how to proceed and possibly get more than one.

Taking a solid position, either prone with the glasses resting solidly on something or sitting with back pressed solidly against a tree or fence post and elbows resting firmly on knees and glasses held in both hands, start on some definite point in the field such as a tree or rock and study everything within the field of view *without moving the binoculars.* And study what you're seeing! Don't just sit there looking at it with your mind on some blonde you dated the night before. There is a time and a place for everything; right now you're looking for 'chucks.

If you don't find anything within the view of your glasses after a thorough survey, move them horizontally until the edge of your new view just laps over the previous one. Continue as before until you reach the other edge of the field then drop down and study another swath parallel to the first one and just overlapping the edge of it. Quite often you will find more game in sight than you believed possible. And you will get a much greater thrill out of locating a 'chucks head peeping out of a brush covered hole three hundred yards away and putting a high-velocity .22 bullet into it than you would in killing fifty of the little critters at seventy-five yards!

And this sort of training might have quite a bit of practical value, too, for the man who is going into the armed forces. In these days of automatic fire when the idea seems to be spray the hillside with bullets and trust to the percentages to hit something I can imagine the joy of an infantry platoon leader who finds himself blessed with a man who can locate an enemy sniper five or six hundred yards away and then put a .30 caliber slug into him. When the target is alive we have to make the first shot count. It's got to be in the X-ring and close 4's are no good. And when the target is shooting back the man who really knows how to handle a rifle is priceless. You don't learn how in six weeks of basic training either, at least not as much as you should know, so learn now and it could well save your life later on! Believe a guy who's been there.

One last word, this about 'scopes. Nobody wants to shoot another hunter but it happens quite often in 'chuck season. It's a hard thing to make a man look like a 'chuck but it evidently happens. So to know what you're aiming at before you squeeze the trigger, put a good 'scope on that varmint rifle. They come in various sizes and prices ranging from 2½ to 25 power and from less than ten bucks to well over a hundred. All of them give a better view of the target than the best iron sights made so get one and save yourself trouble.

. . . *The End*





Wilbur M. Cramer

The Commission has announced the reassignment of Wilbur M. Cramer from his former duties to the important post of Coordinator, Pittman-Robertson Projects. Cramer has served in numerous clerical positions and as Office Manager, Field Division Supervisor, and Superintendent of the Conservation School. In his new position he will administer development of food and cover projects for wildlife on State Game Lands and areas leased by the Commission.



Robert S. Lichtenberger

The Commission has announced the reassignment of Robert Lichtenberger as nursery superintendent of the recently acquired Howard Nursery, located in Centre County. This veteran Commission employee is well qualified to administer this important installation, having a background of forestry training and considerable field experience.

1954-55 Federal Duck Stamp Will Feature Ring-Necked Ducks

A black and white watercolor featuring two ring-necked ducks—a drake and a hen—"slanting in" for a landing has been chosen as the design for the 1954-55 Migratory Bird Hunting Stamp, John L. Farley, Director of the Fish and Wildlife Service, announced today.

Harvey D. Sandstrom, 7639 E. Superior Street, Duluth, Minn., is the artist who drew the winning design for the fifth annual "duck stamp" competition. This will be the 21st stamp to be issued in the Federal duck stamp series.

A panel of 21 waterfowl experts judged Mr. Sandstrom's design as the best of the 114 entries submitted in the competition. During the judging, all entries were handled with complete impartiality. The artists' names and other distinguishing features were masked by mounting the entries behind large art boards which contained 5 x 7 openings.

During the fiscal year ended June 30, 1953, a total of 2,296,628 duck stamps was sold to waterfowl hunters, conservationists, and philatelists.

Ducks and Geese and the "Bricker Amendment"

Too few sportsmen realize how the enactment of the proposed "Bricker amendment" to the Constitution of the United States would have affected the management of North America's migratory birds. Many people dismissed the Senate debate over the making of treaties and executive agreements as a highly technical issue that defied understanding, according to the Wildlife Management Institute.

The supporters of the Bricker amendment used the Migratory Bird Treaty, which the federal government signed in 1916 with Great Britain for the protection of migratory birds in the United States and Canada, as the prize example of how the present treaty laws circumvent internal law. The migratory bird act that was passed earlier by the Congress in 1913 had been held unconstitutional in district courts, but the treaty was upheld by the United States Supreme Court in a test case, the State of Missouri vs. Ray P. Holland. This decision permitted the federal government to accomplish under the treaty laws what the Constitution did not permit without a treaty.

Everyone appreciates the beneficial effects of the Migratory Bird Treaty upon the ducks and geese. Without the treaty it is doubtful that the general public would be enjoying wildfowling today. Senator Bricker has said that although the treaty would be unconstitutional under the terms of his amendment, it could be sustained under the commerce section of the Constitution. Senator Carl Hayden of Arizona, who capably presented the sportsmen's viewpoint during the debate, pointed out that the Migratory Bird Treaty was upheld under the supremacy clause of the Constitution, and not under the commerce clause, because no one could describe the consignor or consignee of a free-flying duck. Under the enactment of the Bricker amendment, the Migratory Bird Treaty and the accomplishments it has made possible, would be as vulnerable as a corn-hungry duck.

Game Fund Gains Through Sale of Hides

Deer hides collected by Game Commission personnel last fall and winter, have been sold to the highest bidder. The transaction netted the Game Fund $2831.80. The number of hides involved was 2,151.

The hides were from deer killed illegally in the 1953 seasons, a number of road-killed animals and many shot while destroying crops. In numerous instances, too, hunters turned deer hides over to game protectors rather than waste them.

Woodchuck and Coon Hunting in Period Closed to Dog Training

Replying to inquiries, the Game Commission furnishes the following information.

Raccoons and woodchucks may be taken in unlimited numbers during the period closed to dog training. But it is unlawful to use dogs to hunt, chase or train upon these wild game species in that period—extending from the 1st day of April to the 31st day of July.

A 1953 hunting license must be owned and worn by persons hunting woodchucks, coons or any manner of wildlife, whether classed as game or predator, any time of year.

1954 Beaver Catch High

Trappers caught 3459 beavers from Pennsylvania waters in the statewide season ending March 6. This year's harvest was about 500 more than 1953's, and about 1000 more than '52's.

Beavers were thought extinct in the state about 1850. The Game Commission stocked them in appropriate areas between 1917 and 1925, and the large water rodents repopulated the northern counties so well the first beaver season was declared in '34. Since then about 42,000 of the valuable fur animals have been taken in the Commonwealth.

Wildlife authorities would not have been surprised had the catch this year been less than last year's. The price offered for a large beaver pelt was only 18 to 20 dollars. Anticipating the probable low pelt value the Game Commission retained the 3-week season of 1953 and raised the limit per trapper to 4—one more than last year. The purpose was to control the high beaver population and thus limit the animal's destructiveness. Probably, desirable trapping weather throughout most of the season contributed to the high take this year. The only beaver catch greater than that of this year was in 1934, when 6456 of these large furbearers were taken.

Once again, Crawford County lead all others in the number of beaver hides sealed by game protectors. Other counties in which more than 100 beavers were taken in the '54 season follow in the order of their relative catch, beginning with the highest: Wayne, Erie, Potter, Warren, Bradford, Susquehanna, Tioga, McKean, Elk, Clearfield, Luzerne, Pike, Forest, Sullivan, and Wyoming.

Survival of Bobwhite Quail Studied at Research Unit

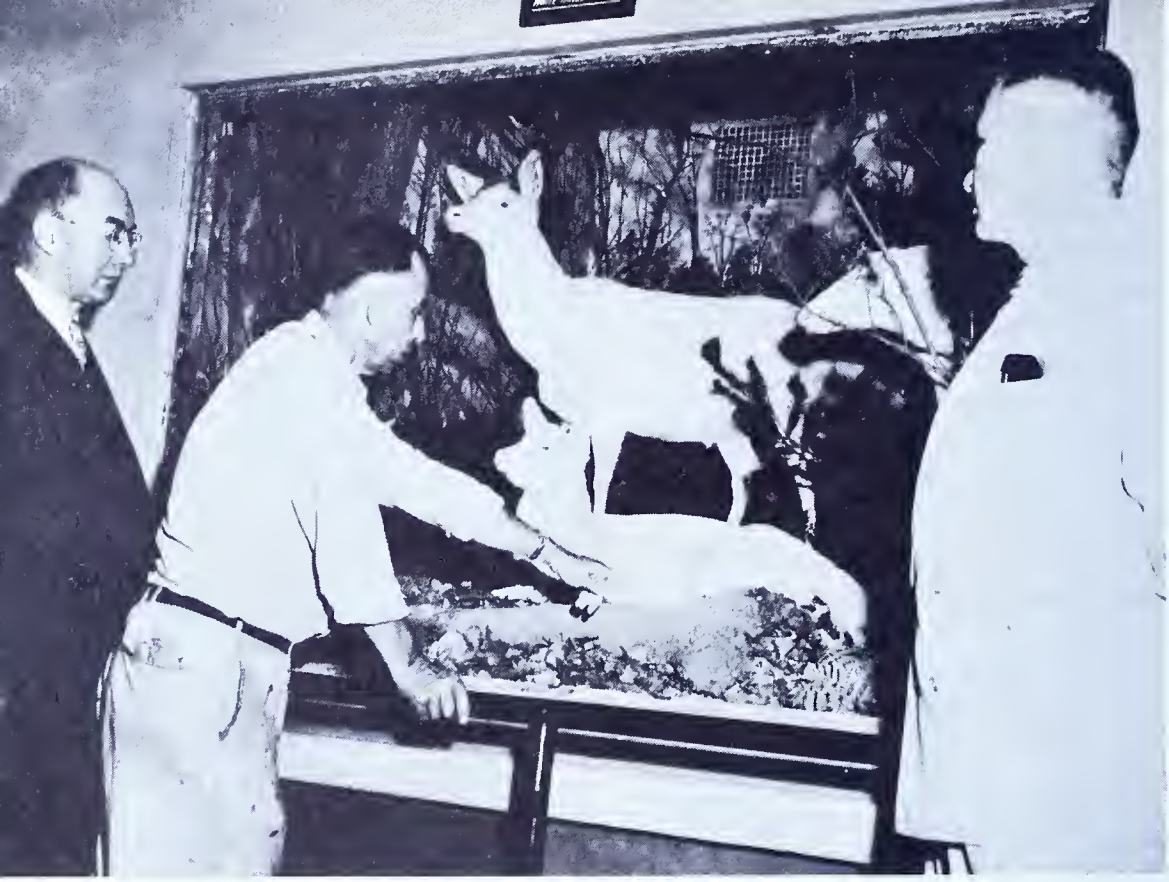
Studies of bobwhite quail over the past six years by members of the Virginia Cooperative Wildlife Research Unit reveal that winter losses of quail from causes other than hunting have averaged 55.5 per cent, the Wildlife Management Institute reports.

Two experimental farms were used to determine how large a harvest of quail may be taken by hunters without endangering the next year's breeding stock. The quail on each area were counted, and then the number of birds on one farm was reduced to six by hunting. The following spring as many quail were found on the farm where shooting was permitted as on the area where no shooting was done.

Photo Courtesy Marshall Dussinger

Wayne Young, of Mount Joy, trapped these beavers in the first four days of the 1954 Pennsylvania season in Potter County.





This beautiful display of an albino deer group is an added attraction to the Game Commission's museum-like exhibit at Hershey this year. Shown inspecting the striking family group are, left to right, George Bartles, manager of the Hershey Park; George Koehler, the Commission's exhibit preparator who designed and constructed the entire display; and Bob Reed, Commission Director of Public Relations.

Waterfowl Survey Plans Completed

Plans for the annual waterfowl breeding ground surveys to be conducted in Canada and the United States (including Alaska) this spring and summer were announced recently by Secretary of the Interior Douglas McKay.

Basic information to guide officials of both countries in drafting appropriate regulations for hunting wild ducks, geese, and coots during the 1954-55 season will be gathered.

In compliance with United States and Canadian responsibilities under the Migratory Bird Treaty, field projects designed to produce a forecast of fall flights have been arranged. Details have been worked out jointly by the Department of the Interior's Fish and Wildlife Service and the Canadian Wildlife Service.

The surveys will be made by the two services in cooperation with Provincial wildlife workers, State fish and game departments, Ducks Unlimited, and the Wildlife Management Institute.

Aerial and ground observations, beginning in May and extending to the hunting season, will bring forth pertinent facts about breeding pairs, water conditions, and the new generation of birds. By means of the latest sampling methods, representative data will be obtained from all corners of the North American Continent where waterfowl are known to breed.

Emphasis will be placed on banding operations as a basis for future studies of hunting pressures, mortality rates, and bird distributions.

Rabbits Abound at Letterkenny Ordnance Depot

In a cottontail rabbit study report, Glenn L. Bowers, of the Game Commission's research division says: "Probably one of the most striking examples of the effect of food and cover on cottontails in Pennsylvania occurred on the Letterkenny Ordnance Depot, Franklin County. Prior to its acquisition by the U. S. Army, in 1942, this area of above-average farm land supported low game populations. So does much of the surrounding farm land today, primarily because of poor cover conditions resulting from intensive farming.

"When farming operations ceased the resultant heavy growth of weeds and shrubs brought about a tremendous increase in the number of cottontails for several years. Predators also increased markedly. Foxes were abundant. Large numbers of hawks and owls concentrated on the area, and house cats gone wild were numerous. But the cottontail population continued high.

"Annually, beginning in 1943, large numbers of cottontails have been removed for restocking purposes. Certainly here lies ample proof of the role of food and cover in rabbit management. No rabbits were liberated on the area, and the large numbers of predators did not prevent their increasing to almost unbelievable numbers." (Meanwhile, moderate hunting was enjoyed on the Depot by Army personnel.)

Two years ago the Army changed its earlier policy and permitted farming of some of the better fields within the area. This was fortunate from the standpoint of an even greater rabbit yield because this limited farming provided additional wildlife foods and prevented the fields from going back to forest growth.

On March 31 of this year Bowers reported: "The latest trapping effort was greater than during previous years of transfer from Letterkenny Ordnance Depot. Three trappers used about 300 traps each during the period from December 7, 1953 to January 30, 1954, and 6429 cottontails were transferred. Of these, 5861 were ear-tagged and sexed. These were 2737 males and 3124 females or 46.7% male and 53.3% female animals.

"An indication of the abundance of cottontails was demonstrated the first night of trapping, last December. It was possible for me to place 201 traps on the initial day, and 107 rabbits were taken that night. Later, some traps took a dozen or more rabbits without being moved."

The cottontails ear-tagged by Game Commission research personnel were released in suitable habitat under the direction of game protectors. Any hunter who bags one of these rabbits is asked to return the tag to a game protector or the Game Commission office at Harrisburg. In so doing sportsmen will provide information necessary to better wildlife management.

Change in Time Affects Chuck Hunting Hours

Game authorities remind woodchuck hunters whose time pieces are set for Daylight Saving Time: all shooting hours for wild game in Pennsylvania are based on Eastern Standard Time. Therefore, on April 26th the current 7 a.m. to 5 p.m. game hunting hours, set by law, became 8 a.m. to 6 p.m. according to Daylight Saving Time.

From July 1st to September 30th inclusive, however, game shooting hours will be 6 a.m. to 7:30 p.m. "slow time," or 7 a.m. to 8:30 p.m. "fast time."



OUTDOOR FUN WITH A FUTURE



Water For Wildlife

PERHAPS you never stopped to think about it, but if you are interested in the outdoors, you are fortunate indeed to live in Pennsylvania. You live in a state where there's lots of water the year round. Maybe right near your home there isn't any water, but you do not have to travel very far to find a river or lake, stream, pond or swamp. That would not be true in some other sections of the country, where the climate is such that rain falls during only a small part of the year. In those places there aren't many ponds or streams that have water in them all year round.

Think of all the animals that live in or near water that would not be there if there were no water! Of course there are fish—trout, bass, bluegills, perch, carp or suckers depending upon the kind and condition of the water. Then there are water birds—ducks, geese, rails or herons that need water for feeding or nesting. Finally are mammals that usually are found in or near waterways—muskrats, beaver, raccoons or mink. In addition to these animals that must have water for their nests, dens, food or shelter, there are many, many more that you see along waterways drinking or preying on the animals that live in the water.

There's no doubt about it—water is very important to wildlife, as it is to you. But just any water won't supply the needs of wild animals. To be most attractive to wildlife, water must be clean and pure. To understand why, first it is important to know how nature works in a body of water. Let's take a pond as an example.

In order to be most attractive to wildlife, a pond must support a variety of plant life—plants that live in the water. Several things help determine the kinds of plants that will grow in the pond. The amount of water and the stability of the water level; the depth and clearness; the temperature; the wave action along the edges; the kind of bottom; the minerals dissolved in the water and found in the soil on the bottom; the condition of the land surrounding the pond—all these affect the plant life.

Like plants on dry land, water plants too need light so that they can manufacture food. That's why the most luxuriant plant growth—bullrushes, cattails,, pickeral weed, wild rice, pond lilies, arrow root and waterweeds—are found in shallow water where leaves get sunlight easily.

Where the water is too deep for rooted plants, small plants that you cannot see without a microscope take over. What these plants lack in size they make up in numbers. There are millions and millions of them. Living among and on these tiny plants are

equally tiny animals. Both of them together are called *plankton* and without them many of the larger animals found in water would not be able to live.

Some or all of these plants that live in the water provide food and shelter for tiny animals called protozoons. The protozoons are eaten by larger animals, and these in turn may be eaten by insect larvae that live in the water. Small fish eat the larvae, and larger fish eat the smaller ones. Finally, along comes a heron, osprey, mink or man and catches the large fish for food. It's easy to see then, why the plant life in the water is important to wildlife. It is the first step in a food chain. Without the plant life there would be no food for animals.

Some of these plants are important directly to animals. Some ducks like mallards or blacks for example, eat the plant life itself. Muskrats eat the roots of the plants that grow along the water's edge. Fish find shelter from their enemies in the dense plant growth. Without the plants, the animals that need them will not be present in as large numbers.

Remember that we said that clean, pure water was necessary for the nest plant growth? And that certain minerals dissolved in the water or found in the soil on the bottom were important to plants? Here's how that works:

If you've studied general science, botany or biology in school, you know that a green plant can be compared to a factory. It uses sunlight as power and water and minerals from the soil to manufacture food that animals eat. Without sunlight or minerals this food manufacturing process cannot go on.

In water, generally, one or all of three things may interfere with this manufacturing process in one way or another. First is silt or soil that washes off farmlands, burned over forests, new road cuts or such places and makes the water muddy. When the water is muddy, sunlight cannot get to the plants and the plants die. The minerals that plants need get

The raccoon is an outstanding example of an animal which spends much of its time along waterways. In fact, part of its scientific name is derived from a Latin word meaning "to wash."

U. S. Fish & Wildlife Service Photo



into the water through run-off of rain falling on the land watershed and draining into the pond. If this land has been "farmed out," burned over or in some other way depleted of its minerals, the water may not contain the minerals needed by the plankton and other plants. In the case of burned over land, rain washing over the ashes or burned wood may carry too much of the wrong kind of minerals into the water. This may kill the plankton and other plants and animals.

Several kinds of fish need gravel, sand or rocky bottoms to build their nests and lay eggs. Silt washing into the pond may destroy these nesting sites, or cover up the nests after the fish have layed their eggs. Thus the silt is directly harmful to these fish.

The other two things that are harmful to water plants and animals are sewage from towns or villages and waste materials from mills, processing plants or factories that are dumped into streams or rivers. But state laws have been passed to prohibit such practices, and if enforced, will sooner or later remove this cause of pollution in streams and rivers. So the big problem that remains is that of silt or soil washing into the waterways.

What You Can Do

There are easy ways to find out how important water is to wildlife, and one of the easiest can be done right in your own back yard. Build one or more bird baths and place them in suitable locations. Keep them filled with clean water and watch them occasionally. In the average yard or garden you can expect to see such birds as blue jays, robins, thrushes, thrashers, cat birds, orioles, tanagers, cardinals, mockingbirds, sparrows and warblers all come to drink or bathe.

Here are two easy-to-make bird baths:

Materials required: trash can or garbage can lid, 15 to 24 inches in diameter; 2 x 4 inch, 4 x 4 inch or 4 inch diameter pole, 4 feet long; three 2 inch long wood screws; three 1 inch diameter rubber washers to fit the screws. Paint the half of the pole that goes in the ground with a wood preservative.



Find a shady spot in the garden or yard, near some shrubbery or trees. Dig a hole two feet deep. Set the pole in the hole and tamp in the soil around the post until it stands upright and is firm and steady.

Remove the handle from the trash can lid and set the lid on the pole. Drill holes through the lid so the screws slip through easily. Place the washers on the screws, and hammer the screws into the pole top an inch or so. Tighten with a screw driver. The washers will prevent water from leaking out through the screw holes. Stain or paint the pole and paint the outside of the lid with green or white enamel. Find a flat rock about six inches in diameter and four

inches thick and place it in the center of the bird bath. This provides a perch for the birds while they drink.

The second kind of bird bath requires a trash can lid, a wooden mixing bowl or a round shallow pan.

In a shady spot near shrubbery or trees, make a pile of rocks or dirt that is three or four feet in diameter at the bottom and 18 to 24 inches high. The top diameter should be slightly larger than the diameter of the bird bath. If you use dirt, make the top of the pile slightly concave so the bird bath will be firm and steady. If you use rocks arrange the top layer so it provides a firm base for the bird bath. Sprinkle soil in the cracks between the rocks and plant grass or flowers in the soil. If you use soil, plant grass so rain will not wash it away. Place a flat rock in the center as before.

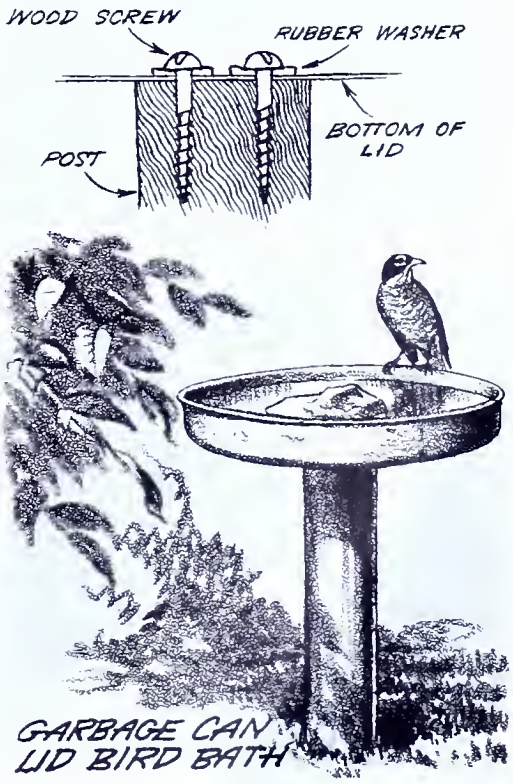
If birds do not find the bath readily, here's a stunt to try: Hang a tin can two or three feet above the bird bath, on a tree branch or a pole driven slantwise into the ground. Punch a small hole in the side of the can, ¼ inch above the bottom rim. Fill the can with water. Whittle a match stick to a point and stick it in the hole. Adjust the match stick so that water drips out of the hole at a rate of 15 or 20 times a minute.

This drip into the bird bath will cause ripples or a sound that will attract birds. The drip is especially good at night when immigrating warblers stop in your yard to rest.

Just as birds use your bird bath to drink or bathe, these same birds and other animals use natural waterways. A few hikes along streams, rivers, ponds or marshes should show you how important water is to animal life.

The best time to look for animals along the water is very early in the morning or just before dusk. Early in the morning you may be successful in finding the tracks of animals that come to the water's edge to feed or drink—raccoon, skunk, mink, bobcat, deer, or bear. You may even see some of the animals if you are quiet and sit still. You may see herons standing along the edge waiting for a fish or frog; or see an osprey soaring overhead searching for a fish that is too near the surface for its own good. A kingfisher or two may be cruising up and down the stream or lake edge searching for minnows, and there may be a hawk waiting for the kingfisher.

In the water itself, trout or bass may be feeding or the still water may be dimpled by sunfish feeding near the surface. A beaver may be swimming along, an aspen branch in his mouth. Muskrats may be feeding along the edges, as may "puddle ducks" such as wood ducks, mallards or black ducks. There are many animals that may be seen, or whose tracks may be found in the mud or sand along the waterways of Pennsylvania, if you look for them carefully. That's the best way there is



to find out which animals go to water for one reason or another—go out and see for yourself.

If you live in the country, or have done much hiking or camping, you may know where there is a spring or wet soggy spot in a meadow or field. If you haven't found such a place, look for it on the next hike or hunting trip you take. There may not be any water at ground level, but the greener, more luxuriant plant growth usually reveals that water isn't too deep. Such shrubs as willow, some kinds of ferns and other plants grow only in moist places.

Once you find such a spot, dig out around the spring, or in the boggy area. Dig a hole five or six feet in diameter and 18 inches deep. Watch to see that the hole fills up with water. If not, try again in a lower place. Digging out spring holes such as this provides watering places for animals, where they can come to drink. It won't take them long to find it.

If you know of small meadow streams—those little creeks that start out as a spring and are not very large—you can build small dams and form little pools that will provide places for animals to drink. Use logs or rocks to build these dams. The dams need not be too large, just enough to form pools a foot or so deep.



In some places it may be possible to dam up such a meadow stream and form a small marsh. The dam doesn't have to be high, but it should be high enough and long enough to hold back enough water to flood a quarter acre or so at least. Once these small marshes are established such animals as muskrats may be attracted, and if the right kind of plants are there, even ducks may stop there to rest during migration.

If you find places along stream or pond edges where the plant cover is gone, and where every rain washes soil into the water, try planting grasses, willow shoots or other plants that will hold the soil in place and prevent it washing into the stream.

It's best to plant willows early in the spring when the soil is moist. But if you find a place that's in need of planting, don't wait till next year. Try planting willows now. First with a sharp knife, cut some shoots from willows that are already growing near the water. Then with a crow bar, planting bar or sharp stick, poke holes in the ground close to the water. Stick the willow shoots in the holes so they extend 18 inches or so deep. Tamp the soil firmly around the shoots.

When these willows grow, they not only help hold the soil in place but they shade the water and keep it cool. In the hot summer this shaded water is important for fish.

Clean, pure and cool water is important not only to fish but to other wildlife as well. Anything you can do to improve waterways or build new ones will help guarantee a variety of animals to trap, hunt or watch just for the fun of it in the future. By being a practicing conservationist now you'll have a better chance of good sport later on.

The Question Is



By David E. Fisher

MY daily mail proves to me that the problems of dog breeding, training and care are without end. No manual or book written on the subject could contain the answers to the many questions asked by owners of sporting dogs.

It's an old story. The more highly bred a dog becomes, meaning the longer it is selectively bred to raise it to a higher degree of efficiency for a single purpose, the more delicate becomes his nervous system. Therefore, where pure-bred dogs are concerned, new problems continually keep cropping up. These problems on breeding, health, training, are continually increasing.

It is not surprising then that I receive so many letters requesting advice on these subjects. Many times sufficient information is not passed on to me so that I may make an analysis to give a reasonably correct answer to the problem, and can only speculate on cause and cure. Many of these problems or situations occur and recur frequently and I must repeat the same advice. Beginners, with their first dog want information which I must repeat and old timers, I hope, profit by a review of such answers.

In this month's column I will give some answers to questions most frequently asked by Beagle and hound-dog owners.

Deer Proofing a Hound

Here are several methods advanced and vouched for by leading authorities and trainers. You try the one you like best.

(a) The way to break a hound of running deer is to whip him off the track. Do this consistently at every opportunity. You can try working him on a 50 foot check cord, soaked overnight in water to prevent it tangling with brush and undergrowth. Stay as close to him as possible and when you are certain he has picked up deer scent, step on the line and shout at him. Practically all dogs have the instinct to run deer and the fault may be cured only by constant correction.

(b) This method may sound a trifle severe, but tough treatment is often necessary to overcome a bad habit. This method has its best point in that it requires no whipping which is one reason I approve of it heartily.

The method requires a small bottle of deer musk (obtainable from any trapper's supply dealer) and several #0 traps with weak springs. Go into the woods and set several of these small, weak springed traps at various spots, in a line as a deer would run, cover them lightly and carefully with a few leaves. Behind, on, and above each trap place a few drops of the musk.

Later, take the deer-running hound through the area, guiding him close to the first trap. He will scent the musk and investigate at once with the expected result that the weak-springed trap will snap on his foot, scaring him half to death, but hurting him very little. Do not whip the dog. Just remove the trap and proceed on to the next trap location.

Your hound will approach the next deer musk baited trap a bit more cau-



PGC Photo by Parlaman

The judges congratulate the winner of the 13-inch all-age stake recently held by the Fryburg Beagle Club in Clarion County.

tiously and if he should be caught again it is your lucky day, for by then your deer-runner will be associating the smell of deer with a snap on the foot.

Repeat this treatment the next day. If the hound hesitates at the trap location (which incidentally should be in another locality than the place you were the day before) coax him in until he sniffs the deer musk. If he does get caught, go away a short distance and leave him alone with his foot fast in the trap for a little while to think it over for himself. Two or at the most, three days of such treatment will cure the most confirmed deer runner.

(c) One of the most effective methods we have found in our own kennels to "prevent" pups and young dogs getting started running deer is to have a young goat with them during the summer months or off-training season. Every spring we get a young kid (nanny, not billy) and just let it run loose around the kennel and play with the dogs. We have never had one of our young dogs ever run deer since we started doing this.

(d) Another method is to follow the instructions of the supplier of the deer musk to you, but at the same time attaching two small pieces of cloth on a rubber band—the one piece being soaked with musk (few drops)—the other piece to give you a better grip in holding on to the band. Let your dog smell this and then pull it back and snap him lightly on the nose and then let him smell again and repeat this a half dozen times.

So there you are fellows, one of these methods is bound to work on your hound. From then on you'll not be bothered with him running deer.

Removing Porcupine Quills

They tell me this is an almost painless way to do this, altho I have not had the chance to try it since it was handed on to me. First, take a pair of very sharp scissors and cut the

quill in half. This allows the quill to deflate. Then put a bit of vinegar on them. They are supposed to come out easily. If any of you have the misfortune of having your hound get a load of quills—let me know how this works.

Keeping a Hound in Condition

This has been passed on to me by one of the top dog men in the country, now 88 years old and still going strong. Take some powdered sulphur and mix it with molasses and rub some of this mixture on the front leg of your hound. He will lick this off and it will help keep his blood cool and condition him, especially during the summer months.

Condition is the difference between a hard working, competitive hound that will stick all day long and a quitter that doesn't deserve the room it takes up. Just a bit of care on your part will make the difference. When the hunt is over, blanket your dog for the chilly ride home. When you get home give your dog a brisk rub with a rough towel and then a bit of warm food. Never wash a dog in cold weather. Use rubbing alcohol or a bit of corn meal to which you have added either pine oil or cedar oil. See that your hound has a warm bed of clean straw in a kennel that is free of drafts and out of the wind. Your dogs like our army, travel on their stomachs. When hunted hard give them two meals a day, one of them being raw beef (plate is OK).

Preventing Gun Shyness

The best way is not have it ever get started. We do this by having a couple of repeating or roll type cap pistols lying around in our kennel handy. Every time we feed, after the pups get their nose in the pan, we pick-up and shoot the pistol. You can have a stick handy and slap it on the floor or against the wall so it will make a "crack"-ing noise. NEVER hit on the kennel or enclosure fence.

Treatment for Mange

With summer coming on, mange will come with it. I've always felt sorry for any dog that is covered with old crank case oil in a case of skin trouble. So here is a recipe that you will want to keep handy. It is over 100 years old and I've met only two persons in my lifetime who knew of it. Take one pound of powdered sulphur; ¼ pound of black antimony (never heard of it I betcha); one quart of fish oil. Mix thoroughly and cover your dog with it. Don't be afraid to use your hands for a little soap and water will clean them. In even the most stubborn cases, two rubbings of this remedy will give desired results. Another mange remedy that has been passed on to me, but which I have not had a chance to test myself is this: 1 oz. balsam of peru, 1 teaspoon of creolin in enough alcohol to make an 8 oz. solution, applying to affected parts with cotton once daily. Keep dogs in warm, dry place and see that they stay indoors for awhile after getting a good rubbing with this stuff.

Getting Rid of Flies

Quite a number of beagle owners have written me that they have trouble with flies no matter what they do. Alright, spray your kennels and yards three times a week with 3% solution of creolin, dispose of all droppings daily. Best if you can have a concrete run and wash it twice a day. Keep your dogs groomed by sponging them with bay rum and water (4 tablespoons to two quarts of water) and then rub them dry with a towel. Witch hazel and water may also be used. Give your dog rare beef (we recommend plate beef as it is the cheapest cut) . . . mixing the meat in small chunks with stale whole bread and cooked vegetables. A raw egg 3 or 4 times a week and 1 tbsp. of cod-liver oil daily.

Use Your Big Game Rifle on Varmints

By Ed Shearer

IN YEARS past it was customary for the average big game hunter to carefully clean and grease, then stow away his rifle, when the big game season closed. With the exception of maybe a few desultory shots at extemporaneous targets his big game rifle remained in the gun cabinet until the following season.

The immense growth of varmint shooting is bringing a great change among this class of shooters. They are discovering three things. First—they have been passing up the most beautiful and enjoyable season of the year to be afield with their favorite rifle. Second—They are getting more actual shooting than they ever dreamed of in big game season and over a far longer period of time. Third—they acquire a degree of marksmanship, knowledge of their rifle and game craft they would never attain on their annual hunt.

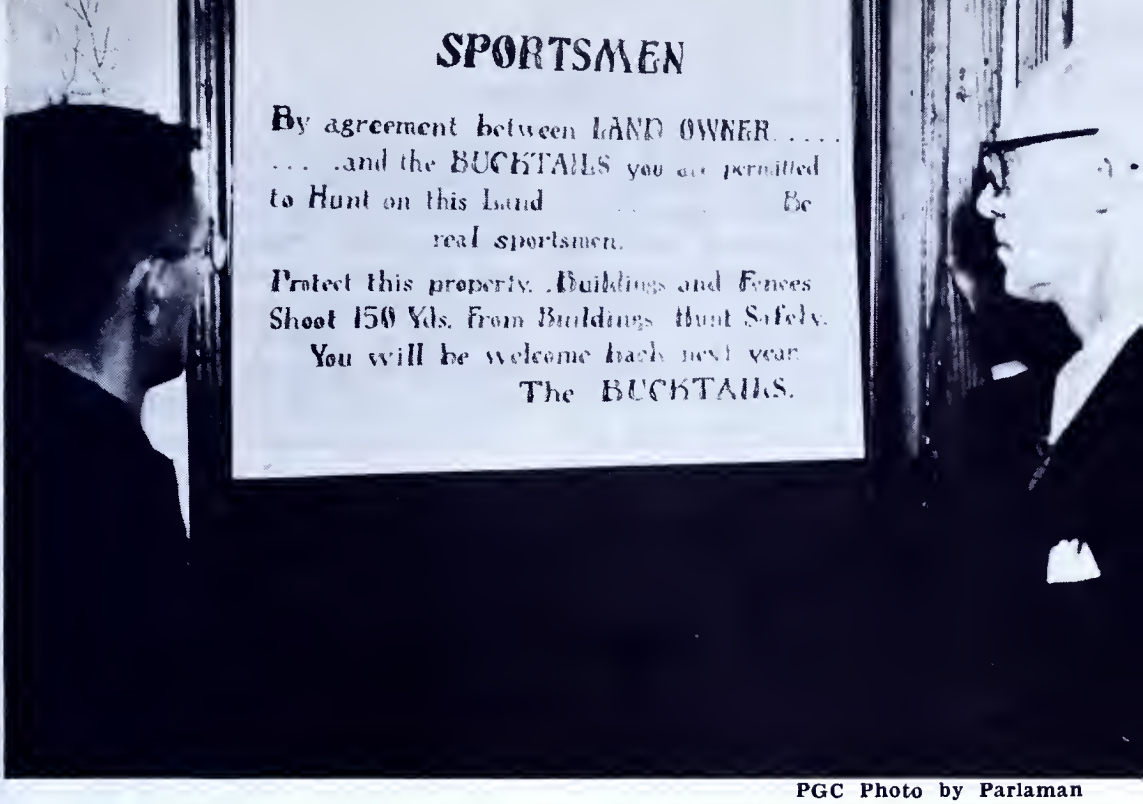
There is one double-barreled question that tops all others right now, in my mail and inquiries. Why can't I use my big game rifle on varmints and what is the best cartridge to use both on varmints and big game? The first part of the question depends on the cartridge the rifle shoots and what ranges and type of country in which you are going to shoot. The second part of the question depends on the largest game on which you intend to use the rifle. For instance, a cartridge that would satisfactorily take care of deer and black bear would be way too light on moose, elk, or big bear. Also keep in mind that it is possible to drive a tack with a sledge hammer but there is not much joy in it. So in order to get a mind picture, let us look at the fundamentals a cartridge and rifle must have to make varmint shooting a pleasure instead of a headache.



The first requirement is a fair amount of accuracy, say around a minute and one-half of angle or 1½ inches per hundred yards. My personal experience has been that as far out as you can retain this kind of accuracy, up to the size of the varmint kills, would be consistent if hold, wind and range estimation were right. Varmint size must be considered. The same shot that kills a crow at 200 yards would miss the same crow at 250 yards—but probably give you a kill on a chuck.

The second requirement is a reasonably flat trajectory. The small size of Eastern varmints generally, does not take too much range to make it a hopeless guessing contest with a lot of cartridges.

Third, is velocity enough to make the bullet break up on impact? Nothing annoys the average farmer quite so much as a ricochet bullet whining past his ears when he is sowing his crops. There are of course many other desirable features in a varmint rifle but these will get most rifles by on the average.



PGC Photo by Parlaman

Harold Sheats, left, Oil City, president of the Venango Bucktails, and Bob Kaufman, of Cranberry, study a sample poster that the club has agreed to print and distribute to co-operating county farmers and landowners who will permit hunting. The effort is a part of the farmer-hunter relationship program sponsored by the club.

In general, therefore, the 30/30, 32 special, 30 and 35 Remington class do not qualify as varmint cartridges. They are fine big game rifles but accuracy in the actions they are commonly made in is below the standard of ordinary varmint shooting. Their trajectory makes them suitable for short range varmint shooting only.

Velocity is too low to insure bullet break up which makes them dangerous to use in any but the most unsettled localities. There are some commercial 150 grain bullet loads on the market for the 30/30 that are advertised as varmint loads. But experience has shown they are far from safe in settled farming country.

However there are quite a sprinkling of cartridges and rifles on the market that can do a fair to good job on both big game and varmints. The 300 magnum, 30/06 Springfield, 308 Winchester, 8 MM and 7 MM Mausers, 257 Roberts and 250 Savage, are some good combination rifles on game and varmints. As I have fired all of those rifles in the past year off a bench rest in various makes and loads, I will comment on their performance as I found them. Some rifles will do better and some worse, no doubt.

300 Magnum—This was a standard model 70 Winchester with a 4 power scope. This particular rifle was capable of 5 shot minute of angle groups with good 180 grain bullets. The best varmint load I found was 62.5 grains of DuPont 3031 powder, Remington 9½ primers with 125 grain Sierra bullets though any good similar weight bullet would do the same. Velocity runs close to 3200 ft. sec. with pressure about 50,000 pounds which is medium in this big belted case. The 110 grain bullet can be pushed up to better than 3500 ft. sec. but the accuracy is not so good. This is a noisy number and a bit on the sledge hammer side for Eastern conditions. Would be fine in the West where the game and varmints run larger.

30/06 Springfield—This popular cartridge has more varied loads for

everything from mice to moose than any other cartridge in the world. For nearly a half century gun cranks have been experimenting with its loads. At least one commercial load uses a 110 grain bullet at 3420 ft. sec. velocity for varmints. The trajectory is very flat and the bullet breaks up well on impact. The fly in the ointment is the 110 grain bullet does not do too good in 30 col. rifles with 10 inch twists. The few custom rifles with 12 inch twists that I have shot gave fine results with this speed load. My favorite varmint load that works out well with most rifles is a 125 grain bullet with 46 grains of Hi Vel powder and Winchester 120 primers. The pressure is medium and easy on the cases making neck sizing only necessary. Accuracy runs 1 to 1¼ minutes in most good rifles and bullets break up well.

308 Winchester—There is relatively little data available on this cartridge due to its being loaded with ball powder. This leaves the handloader mostly on his own. As this cartridge is rather critical and gives sudden pressure spill overs, it takes careful handling. Its 12 inch twist handles the 110 grain bullet with fine accuracy. The best varmint load I have fired to date is 40.5 grains DuPont 4198 powder with Winchester 120 primers and 110 Hornaday bullets. Velocity is in the 2900 ft. sec. bracket with pressure about 47,000 pounds. Accuracy averages close to a minute of angle.

8 MM Mauser—While no factory varmint loads are available I fired many experimental loads in a custom Mauser with a 4 power scope and a barrel diameter of .323 inches. My best varmint load was 49 grains of DuPont 3031 powder with Winchester 120 primers and 125 grains Speer bullet. Velocity runs 2943 ft. sec. with 41,000 pounds pressure. Accuracy ran 1½ minutes of angle.

7 MM Mauser—Two loads gave good varmint results. 43 grains of Hi Vel powder with Winchester 120 primers and 120 grain Speer bullet. Velocity runs 2900 ft. sec. velocity and 41 grains Hi Vel with Remington 9½ primers and 130 grain Speer bullet gave 2745 ft. sec. velocity with accuracy running from 1 to 1½ minutes, pressure about 45,000 pounds.

270 Winchester—I have shot this cartridge in all commercial and several custom rifles and found them all very accurate. Just a question of the right load. The best varmint load in all makes that I tried was 54 grains of 4320 powder with Winchester 120 primers and the 100 grain Sierra bullet. This load gives a velocity of 3300 ft. sec. with low pressure of about 44,000 pounds, in standard chambers. This is a very flat shooting load and accuracy runs mostly under 1½ minutes with some rifles doing close to 1 minute. This cartridge makes about the best combination where the game and varmints run to size. There is also a commercial load of a 100 grain bullet at 3540 ft. sec. available.

257 Roberts—I have shot this cartridge a lot over the past three years in all commercial and some custom rifles, with scopes running from 4 to 10 power. This is close to the ideal combination for the East. The best load that is easy on the cases for me is 46 grains of DuPont 4350, Winchester 120 primers and any good 100 grain bullet. One 257 light sporting rifle that I own averaged .8 inch for five groups of 5 shots each at 100 yards with this load. The velocity runs 3000 ft. sec. with 43,500 pounds pressure in standard chambers. I never had much luck with lighter bullets in the 10 inch twist but 87 grain bullets were very accurate in a custom 257 with a 12 inch twist.

250 Savage—This is one of the sweetest cartridges ever designed shooting most anything within the limit of its twist with fine accuracy

For an Eastern combination it's a toss up between the 257 Roberts and the 250 Savage cartridge. The choice between the two seems to be bullet weights. If you like light bullets the 250 with a 14 inch twist is the gun. With the heavier bullets the 257 gets the nod. Among many good varmint loads is 41 grains of DuPont 3031 with Winchester 120 primers behind the 60 grain Speer bullet. This load clocks 3566 ft. sec. with a pressure of 43,500 pounds which is maximum for lever action rifles.

The one fault of all these rifles to a more or less degree is noise—in settled farming districts. Pressures given are mostly laboratory tests. Due to the wide difference of components, rifle chambers and barrel diameters, etc., you use them at your own risk. Start low and work up. They are intended as a guide.

The one thing that is absolutely necessary if you intend to shoot varmints much over 100 yards is a telescope sight. For the hunter who wants to use a scope on both big game and varmints, a good 4 power scope in side mounts would be the best bet. There are many places in the west where a six power would be better. There are many different scopes and mounts on the market at all prices, that will suit most any shooter.

Summing up, there are many ways to acquire skill with your favorite rifle but none are as painless or pay as big a dividend, as shooting varmints in the spring and summer. It adds years to your life and happiness to your days. . . . *The End*

Ten Commandments of Water Safety

1. Before you rent a boat, inspect it carefully. See that it is of good design, construction, and condition.

2. Remember that any boat is dangerous when overloaded. Backlash McSnag, who holds forth on safety matters at the slightest provocation, says, "There ain't no safety in numbers—especially when you're fishing in a boat." The moral is: It's lots more fun and twice as easy to fish two men in a boat than fishin' eight men off the lake bottom.

3. Always row toward shore at the first sign of a storm.

4. Never stand up or change seats in a boat.

5. Take the advice of the man from whom you rent the boat. He knows the hazards.

6. Always swim at designated beaches. Don't take the chance of falling into a drop-off you can't see.

7. Always under-estimate your swimming ability. Don't try to demonstrate your prowess by swimming to distant rafts or to sand bars that usually disappear when you reach them.

8. Never let children out of your sight when near the water. Teach them to respect the water and to be aware of the dangers that it holds.

9. If your boat capsizes, stay with it as long as it floats or until help arrives.

10. In casting from a boat in which there are other people, remember that a fish hook is sharp and if caught in the eye or face may cause serious injury.

Extra Trapping Profit

By Larry J. Kopp

ORDINARILY when we talk about trapping profit we think in terms of cash received for fur, but that is by no means the only trapline profit.

During the past decade or more, many trappers have earned extra dollars from the trapline by carefully saving animal glands. These glands are used in the manufacture of animal lures, and due to the ever increasing demand for such attractors it follows that the demand for properly handled animal glands becomes increasingly great.

The time was when large scale manufacturers of animal lure obtained a sufficient quantity of glands from the animals trapped on their own trapline. But today this is no longer possible; thus, the trapper who will seriously consider this by-product of the trapline has no trouble in finding a ready market, and consequently extra profit.

Some valuable animal glands which the trapper would do well to preserve include skunk musk sacs; beaver castors; muskrat musk glands; and weasel musk glands. These glands are generally easy to locate by the average trapper since they are all located near the vent, and just under the skin.

The important thing is to remove such glands from animals without puncturing them. It is much better to have them encased in flesh than to take a chance by cutting too close and puncturing them. Once removed from the animal they are placed into a glass jar containing a liquid preservative such as alcohol or glycerine. Other non-poisonous and odorless preservative liquids can be obtained from lure manufacturers who purchase such properly handled glands.



In some instances such animal musks are dried in the sun, then ground into a pulp. However the best idea for the interested trapper is to obtain a booklet from commercial lure manufacturers which describes how to locate animal glands; and how to preserve them until ready for market. Such a booklet is especially important since many animals possess glands where the average trapper would not even suspect; and as a result would miss out on some of the profit. A fox for instance has valuable glands located at half a dozen different places on his body, in addition to those located near the vent.

In addition to collecting and preserving animal glands for sale to lure manufacturers, some experienced trappers have found it profitable to compound their own lure; or to have it compounded by reliable manufacturers. The point is that animal glands are valuable. You can either sell them outright; or put them to use in making your own lure.

Sound formulas for making your own animal lure can be found in almost any trapping instruction book. However it is not absolutely necessary to make lure according to a complicated and time consuming formula. A fine lure can be had by merely placing a jar containing animal glands out in the sun, and as

the contents decomposes, draining the resulting liquid into a clean jar. This may then be used as a lure. Remember however that when a jar containing such glands is set out in the sun it must not be closed tightly. If it is closed air tight, gas will form and the jar will explode.

Animal glands are not the only parts of an animal which should be preserved. In the case of foxes some well known lure manufacturers use the entire reproductive organs of female foxes for lure making purposes. This also holds true in the case of other animals. Other valuable animal parts include the gall bladder and the liver. I know some who also include the kidneys as an ingredient for lure making. So, all in all, I believe the more serious trapper would find it profitable to look into these possibilities.

Another thing which trappers should not overlook is the large amount of fat which some animals possess. This is particularly true in the case of skunks; raccoons; and opossums. During the late winter, foxes too possess some fat.

Although there are some highly practical uses for properly rendered animal fat, it is equally interesting to know that years ago many people used skunk and opossum fat in lieu of modern salve for sore throats and chest colds.

Indeed I know some highly respected old people of today who still recommend the use of skunk fat for relief from cold discomforts. Several years ago an elderly friend of mine who is highly respected as a successful practioner of Pow-wow told me that properly rendered fox fat was the very best remedy for easing a rupture. But although I have on various occasions given such animal fat to people for use as a salve, I have never considered it proper to sell it. I do know however that skunk fat has been used successfully to relieve acute chest colds, and this knowledge in itself is sufficient payment for any such fat that people may obtain from me.

There are several other practical uses for rendered animal fat. For one, it can be used to paint various parts of farm equipment to prevent rust. This of course includes shovels, grubbing hoes, and other such tools. Then too, it can be used to treat hardened leather. Working shoes can be made just as soft and pliable with rendered skunk fat as with any commercial product designed for the same purpose. It would also be possible to treat harness leather; or any other leather goods which is put to rugged use. For the trapper it is also good to know that rendered animal fat makes a very good nonfreezing base for lure.

Peter Paul, Jr., of Aliquippa, and 112 foxes he trapped from August 27 to October 28, 1953. Paul is a member of the Aliquippa Bucktails and trapped these foxes in his spare time after working hours in a local steel mill.



To render such animal fat one proceeds in the same manner as when rendering hog fat at butchering time. However for general use, it can be rendered satisfactorily in an ordinary frying pan. Care should be taken not to keep it on the fire too long. Properly rendered fat should look white after it becomes hardened in a cool spot.

The best policy is to drain rendered fat through a small cloth bag into a glass jar. In this way all particles of fried meat or fat will be sifted out leaving a clear and clean liquid. Care must be observed not to pour too much hot fat into the glass jar at a time. A good idea is to place the jar near the fire so that it warms up; and in this way there is not much danger of the jar cracking when the extremely hot fat is poured into it.

Of all the animals trapped by the average trapper, muskrat flesh is perhaps the best all around bait for carnivorous animals. It would certainly be a profitable idea therefore for the trapper to save muskrat carcasses and cut them into small chunks for use as bait in another season. Such bait can be preserved with liquid bait preservatives similar to that used for preserving animal glands. These then are some of the many trapline by-products which can bring extra profit to the serious trapper.

. . . *The End*

Sportsmen Plant for Larger Wildlife Harvest

To most people, mention of spring activities on the farm means soil tilling and planting. Crop harvesting suggests colorful fall scenery and bulging stores of ripened grains, fruits and vegetables.

But in recent years an increasing number of sportsmen's organizations, Boy Scouts, beagle clubs and others also have engaged in planting. In their case grain and fruit crops are seldom harvested; they are planted largely to supply, where grown, food and protection needed by wildlife. In other words hunters, having a stake in the game crop, are participating in sound food and cover management practices to preserve and increase wild species.

Numerous organizations are planting grains or food-bearing trees, shrubs and vines on their club property. Others, lacking land on which to plant, pay farmers to allow strips of grain to stand unharvested close to protective game cover along woodlands or hedges. Corn is the grain for which they usually contract because it provides the best winter food for a variety of wild creatures. In cases where protection is more necessary than food the emphasis is on establishing evergreen plantations, thickets, briar patches, and brush piles.

Some sportsmen's organizations have done food and cover development work on state or federal land. On such holdings, with proper consent and supervision, they have planted food strips, pruned apple trees and released food-bearing species from choking vegetation. Some enterprising clubs have planted game foods on the open strips along power lines and gas and oil rights-of-way, with permission.

Each year more sportsmen ask what they can do to improve hunting conditions in their own area. This shows they have learned the importance of food and cover to the production and survival of the game crops they enjoy harvesting with gun.

The Old Lehigh Canal

Story and Photos by
Luther B. Hoffman

Abandoned and forgotten, this historic canal is in many areas becoming fertile game lands and fishing grounds. Originally laid out for two-way scow traffic, the canal bed is now a haven for game and fish. Local sportsmen's clubs are active in developing this bygone main route of anthracite traffic into excellent fish and game habitat.

The story of Johnny Appleseed is easier to believe when you meet Stewart Bartholomew, of West Bowmans. Stewart's sincere devotion





to an ideal is one major reason why wildlife is bound to flourish in the Lehigh Valley. At his own expense he has sown and planted Japanese millet, burreed, Duck potatoes, wild rice, and eel grass along the Lehigh River, the Canal, Lizard Creek and the Big Creek dam at Parryville. The Bowmanstown Rod & Gun Club has appointed Stewart their delegate to the Lehigh River Restoration Association and he is now chairman of the Association's fish and wildlife committee. He is shown here checking a planting of wild rice.



Roll Your Own Crests

By Thomas A. Forbes

GOLF and archery are two sports that have a lot in common. In both sports the score is determined not through teamwork but by individual effort. Walking takes up a major portion of the time and hunting lost balls, situation that bedevils the average golfer, is the counterpart of the archer's search for lost arrows. Until some one comes along with an arrow or a golf ball that will whistle to attract attention, beginners will spend a major portion of an afternoon walking in aimless circles with bent heads. "Mark your shot" is just as important in archery as it is in golf.

Arrow cresting serves a two-fold purpose. It identifies the individual's arrows and increases the visibility of the arrow thus facilitating its recovery when lost. Custom made arrows are crested to the archers specifications by the manufacturer. Arrows which are mass produced will carry an identical cresting making identification difficult when arrows of the same make are being used by different archers.

The archer who attempts to modify or change the cresting on a single set of arrows, finds painting a very slow process where each color must be dry before an adjacent color can be applied. Any attempt to hurry the job merely makes certain that the colors will run together.

W. E. Sweetland of 2441 Hilyard Street, Eugene, Oregon has produced a decal crest which simplifies the work of cresting arrows, requires no brushes, paint, or tools and produces a dozen completed shafts in a short evening's work. These wrap-on arrow decal crests are available in a dozen combinations in four colors; Fire Orange, Signal Green, Neon Red, and Saturn Yellow. "Day-Glo" colors are used because of their high visibility. "Day-Glo" Neon Red colored garments are familiar to many deer hunters who have worn this color as a protective garment during the past several seasons.

These decal crests are three and a half inches in length and their application is relatively simple. They retail at ninety cents per dozen. Shafts should be cleaned with fine sandpaper and the location of the top of the crest should be marked on each shaft.

Lay the arrow on a table with the nock end projecting over the edge about one-third of the arrow's length. Weight the arrow so that both hands will be free to apply the decal.

Immerse a decal in a pan of hot water for about ten seconds. Remove and hold the decal with both hands, thumbs on the crest and forefingers underneath the paper. Slip the decal sideways until about one-quarter inch of the long edge of the decal projects beyond the white paper.

Lay this edge carefully along the shaft with the long edge of the decal parallel to the shaft, and press it in place with the thumb of the left hand. Gradually slip the paper away from the decal, wrapping the crest around the shaft at the same time. Let the decal overlap. Stroke any accumulation of water and bubbles of air out from under the decal with a wet finger and be sure that the edge is pressed firmly into place. If you work carefully you will have a neat and well aligned job. If it is necessary to realign the decal it may be carefully removed, adjusted and re-

wrapped. Let the decal dry over night and then the excess adhesive may be cleaned from the shaft with a damp cloth.

"Day-Glo" colors will fade if kept for long periods in a strong light. When not in use, your arrows should not be stored near windows where they will be subjected to the direct rays of the sun.

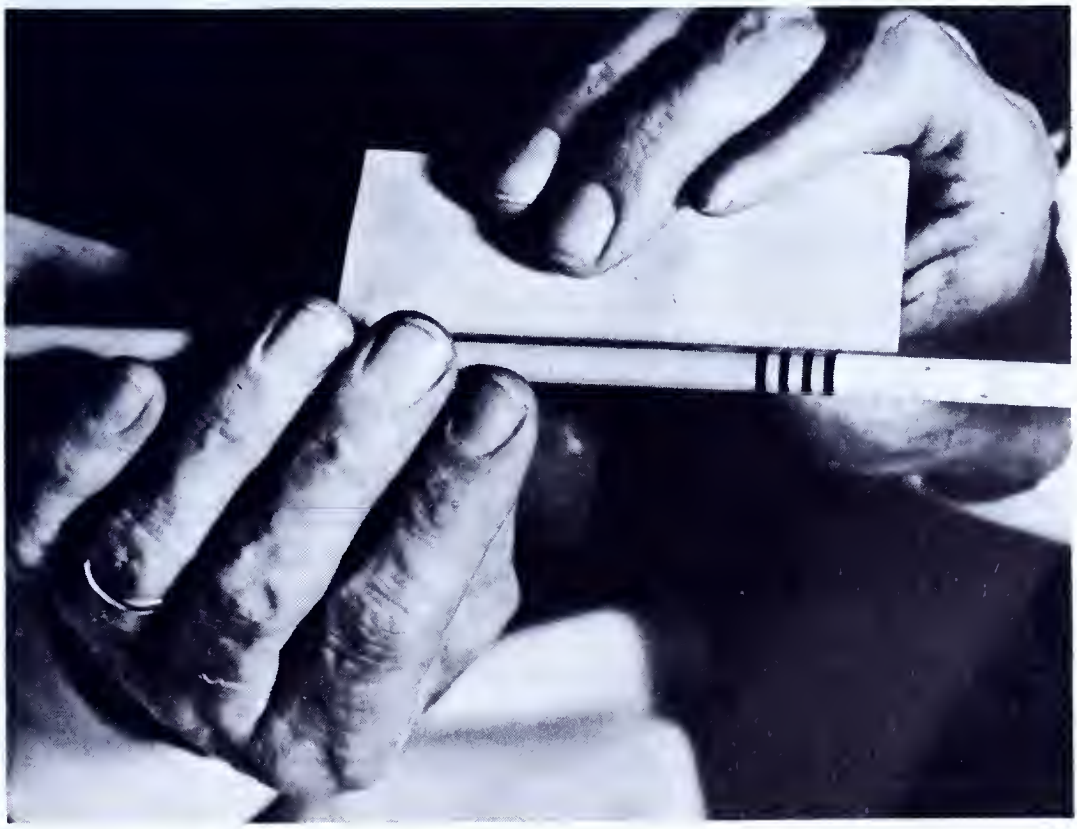
Crests may be cleaned occasionally with a damp cloth. If you desire brilliant colors do not varnish over the completed crest. However the manufacturer states that a clear plastic finish sprayed over the decals helps preserve them.

Keep unused decals in a cool dry place and do not purchase more than one season's supply at a time as the lacquers may tend to become brittle.

For identification purposes you may type your name on the long edge of the decal or if you prefer print your name in India ink which is waterproof. The letters are not effected by the short period of immersion in the hot water. In like manner you may number your arrows consecutively. This latter provision serves to identify an unmatched arrow which consistently flies wide of the mark. Your shooting will improve if these imperfects or unmatched arrows are removed from your quiver.

Now is the time to dress up a few of those worn shafts with some bright new colored crests for the spring shoots. . . . *The End*

Decals showing your name can be easily transferred to arrow shafts. Shafts should first be cleaned with fine sandpaper and the location of the top of the crest should be marked.





Steve Lechman, left, chairman of the predator control contest committee of the Lower Luzerne Fish and Game Association of Freeland, awards Thomas Zarosky first place prizes. Others in the first row are David Stutzman, second place winner; Thomas Evans, third place; and George Wilson, club secretary. In the back row, left to right, are Game Protector Norman Forche and club president Edward Poltrock. Scoring in the contest was based on a point system. The boys took a total of 126 weasels, 36 foxes, and two great horned owls.

For the Best in Outdoor Reading

PENNSYLVANIA GAME NEWS **SUBSCRIPTION ORDER**

Please renew my subscription for GAME NEWS as follows:

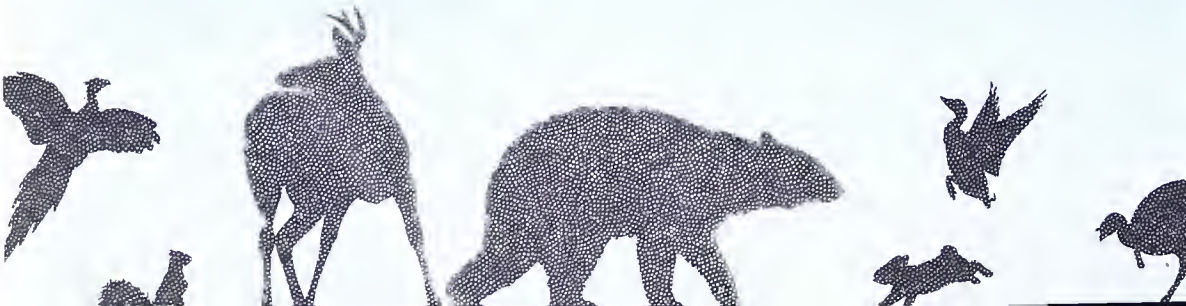
$1.00 per year $2.50 Special Rate for Three Years

Name .....

Street or R. D. .....

Post Office .....

(Make check or money order payable to: Pennsylvania Game Commission)



THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

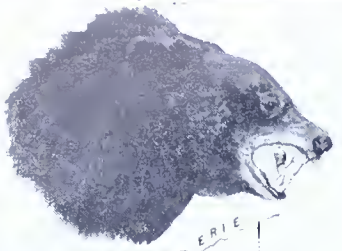
NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

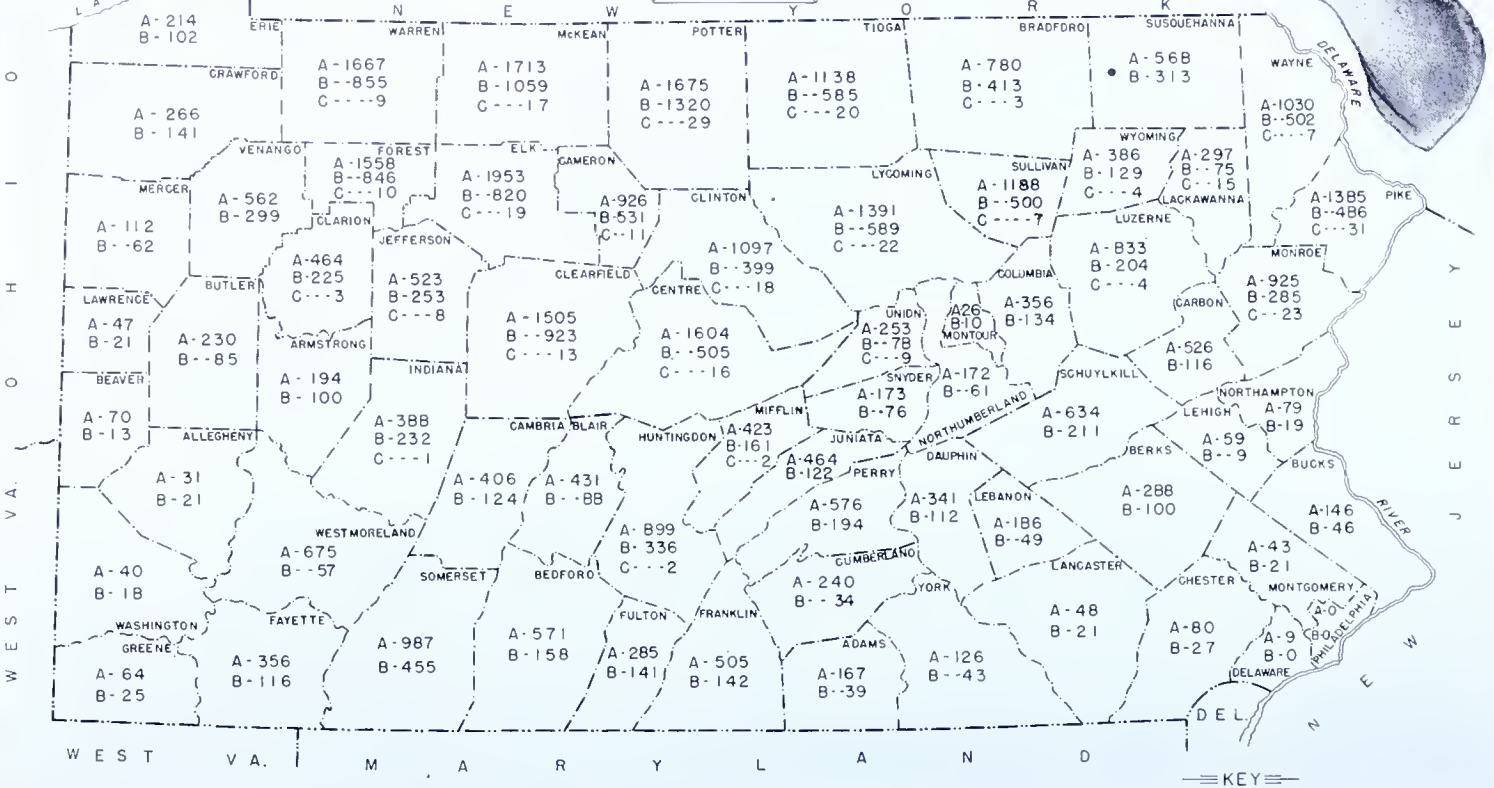


1953-DEER & BEAR KILL

Pennsylvania Game Commission

Harrisburg, Pa.





TOTAL - LEGAL ANTLERED BUCK DEER KILL ···37,384
TOTAL - LEGAL ANTLERLESS DEER KILL ····16,252
GRAND TOTAL ····53,636

A - COUNTY UNKNOWN···30 (Included in total.)
B - COUNTY UNKNOWN···16 (Included in total.)

LEGAL ANTLERED DEER KILL INCLUDES

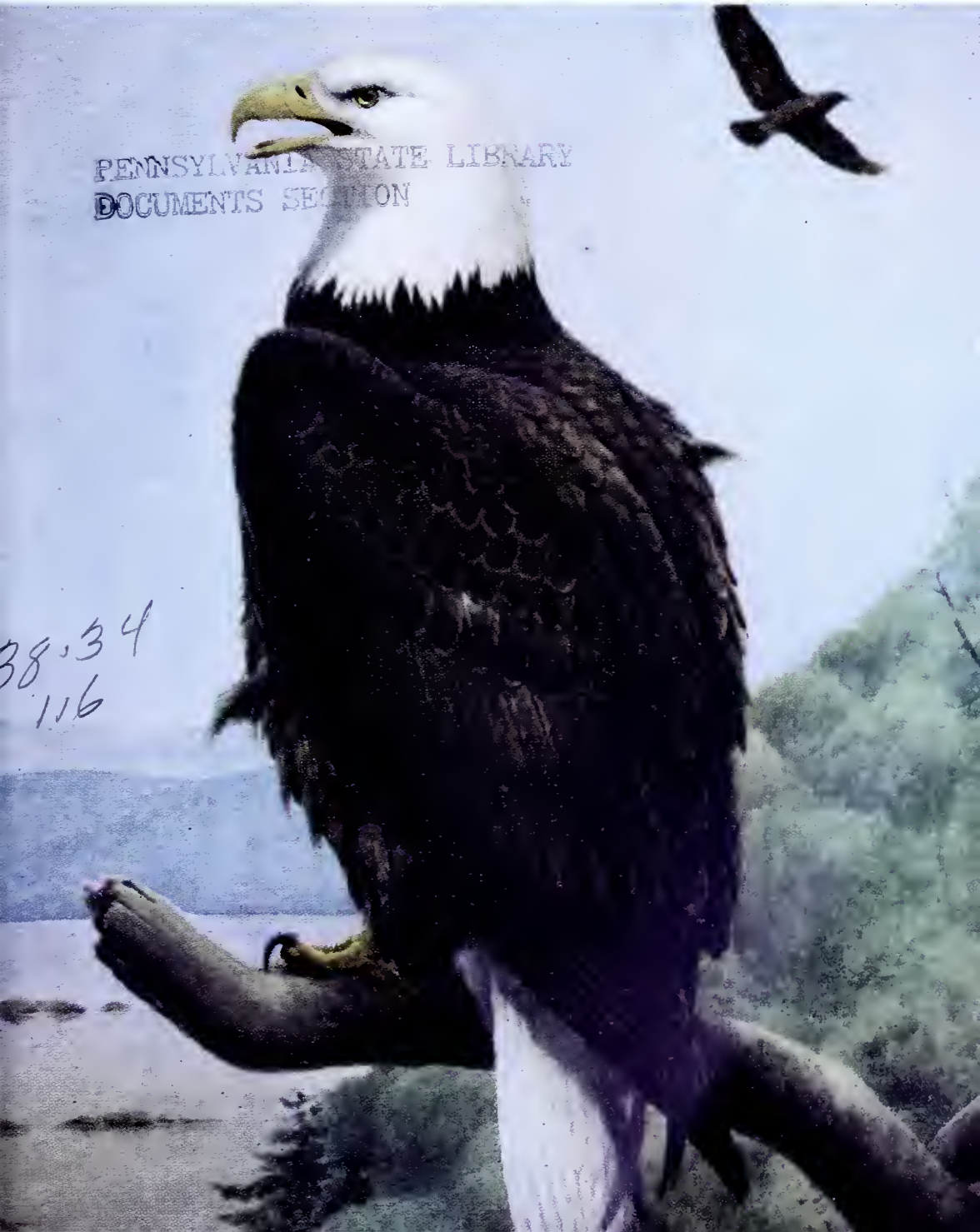
KEY

A - LEGAL ANTLERED BUCK DEER KILL (Tag count)
B - LEGAL ANTLERLESS DEER KILL ···(Tag count)
C - LEGAL BEAR KILL ····(Tag count)

PENNSYLVANIA

Game News

JULY 1954 10 CENTS



PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

38.34
1.16



THE STORY BEHIND THE COVER

TO men of all ages and many nations, the eagle has been a symbol of victory, power, and freedom. And to anyone who has seen this "king of the birds" soaring in the heavens, diving like a meteor from the skies, screaming defiance at the storm, or fiercely striking his prey, it is easy to understand why.

The choice of the American, or "bald," eagle as our national emblem was no easy matter. Six congressional committees worked many years selecting a bird to represent their new nation before the eagle was finally adopted on June 20, 1782. From that day on, the effigy of the American eagle, with wings and feet extended, became the official badge of sovereignty of the United States. On our coat of arms, our Great Seal, the President's flag and seal, and on many of our coins and decorations, the eagle is proudly represented.

In structure and habits, the eagle is a large hawk—the most powerful raptor of them all. The female, usually larger than the male, may attain a length of 43 inches, a wingspread of eight feet, and weigh 8 to 12 pounds. Eagles are capable of lifting their own weight and have been known to carry off lambs and deer fawns. Yet this great bird is content to subsist largely upon fish, often robbing the osprey of its catch by forcing the smaller bird to drop its prey in mid-air.

Eagles mate for life although they re-mate if death dissolves the partnership. They are the greatest home-builders in their class, returning to the same nest and adding to it year after year. One nest in Ohio was used for 35 successive years, reaching a size of 12 feet high and 8½ feet across the top and a weight of almost two tons. Two, rarely three, eggs are laid in March, the eaglets hatching in mid-April. Pennsylvania boasts the only eagle sanctuary in the world. It is located at Mt. Johnson Island, in the Susquehanna River near Lancaster. Regrettably, no eagles have nested here since 1948—the noble birds having either died from natural causes or been killed by human law violators. The national bird is given complete Federal and state protection in this country.

Symbol of our freedom and liberty, the American eagle represents this nation's power and glory. Through protection against wanton shooting and the saving of its rapidly vanishing nest sites, this noble bird can long remain an inspiration to all.

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Tom L. McDowell .....Bradford

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 7

July, 1954

CONTENTS

Good Old Summertime 4
By John H. Day

Meet Mister Monax 9
By Ed Shearer

Experience and Planning Mean Successful Field Day 16
By Marian Potter

Terracing—Past and Present ... 19
By Ivan McKeever

Field Notes 25

Federal Aid in Wildlife Restoration—Northcentral Pennsylvania 29

A Brief History of the Indian Hunter 39
By John Witthoft

★

Cover Painting
By
Earl L. Poole

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Editorial . . .

Spirit of Independence

AMID the fireworks and flag-waving, the parades and popcorn, it is often easy to overlook one basic message of Independence Day. That "these united colonies are, and of right ought to be, free and independent states" is a long accepted and well defended fact. But in a world that has increased its tempo to the speed of a jet, that has narrowed its boundaries with super highways, and has conquered its last remaining unknown areas, the frontiers that faced our American pioneers in 1776 has vanished forever.

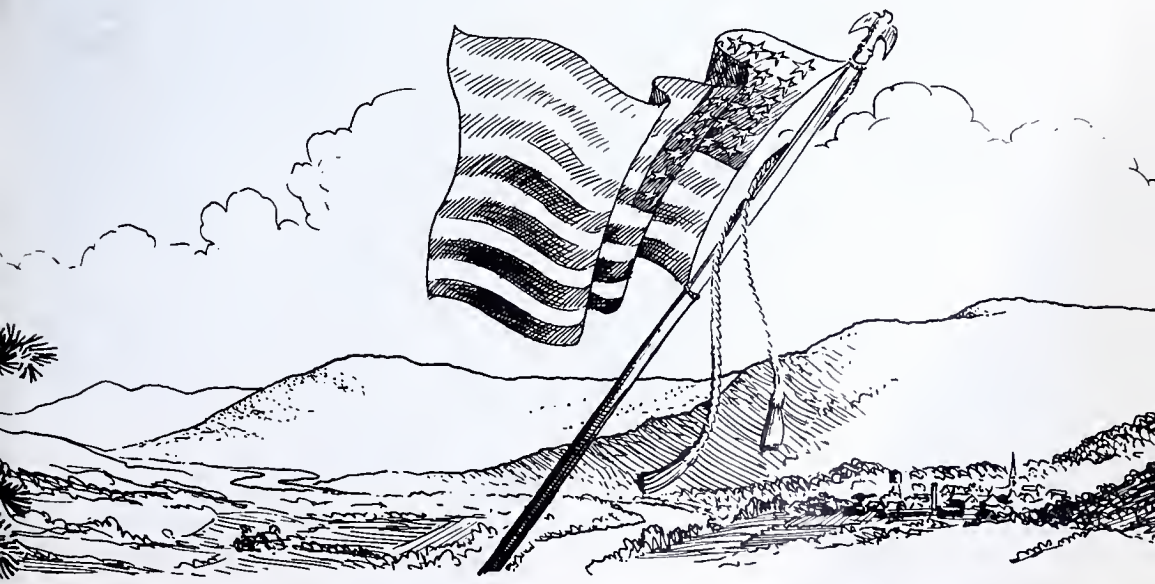
To a degree, we are as independent today as were our forefathers 178 years ago. Our way of life is still based on the same principle that motivated the original noble and courageous Declaration. Yet our very independence today depends on even greater united action to insure the greatest good for the greatest number—the right to life, liberty, and pursuit of happiness.

In no other field of human activity is such action more important to America's destiny than in the use of natural resources. How well and how wisely we plant our farms, harvest the timber from our templed hills, use and preserve clean waters in the rivers and rills—how well we do these things may determine the future of an entire world. *Conservation can't wait!*

Ours is a land of opportunity, the home of the free. As one nation with liberty and justice for all, we hold the hope of the hungry, the sick, the weary in every land. If we are to continue producing the food, fuel, and forgings that will sustain us and our neighbors, all that lies from sea to shining sea must be conserved and used wisely. *There is nothing left to waste!*

July Fourth this year should, and can, rekindle the spirit of '76—the spirit of equality for all, the will-power to face the future with great expectations, the courage of our conservation convictions. All these can confirm our basic dependence on our God-given natural resources and, at the same time, preserve our national independence.

Democracy is safe in the hands of a conservation-conscious people!



Outdoor Reveries



Good Old Summertime

By John H. Day

IF YOU want to find an orchid, you've got to make up your mind to three things. First—you're going to get your feet good and wet, and if you aren't careful it won't be only your feet. Second—you'll almost certainly have to breach a rampart of the treacherous poison sumac to arrive at the elusive quarry. Third—after you've been lucky enough to find a few of these rare blossoms, you've still got to plough your way back out of the swamp to your car.

Once you have steeled yourself to surmount these three obstacles you may, if your lucky star is in the ascendancy, meet up with some of the most beautiful native wildlings in the swamp country catalogue. No orchid that came by air transport from the tropical rain forests was ever more gorgeous than some of these back country neighbors. If you would see them buy yourself some boots and start combing through all the bogs in your bailiwick. You're sure to find something, even if it's only the discovery of what an appetite you've suddenly developed.

I got involved in an orchid orgy the other day. We walked and waded and splattered around through three swampy fastnesses and after a full day of gruelling work, our combined discoveries totaled only three blooming plants of the smaller purple-fringed orchis and three or four gorgeous specimens of the calopogon, or grass pink. We chalked up the expedition as a complete success, for one look at these fugitive fellows through a hand lens or in the camera ground glass is worth a great deal of effort.

We walked through a cemetery to get at the first bog area and were soon deep in a tangled mass of sedges and swamp grasses and a good bit of everything else that grows in the region. The marsh arrowhead was blooming everywhere. The little insect-snaring sundew grows in this swamp. We came upon a good many

of these carnivorous fellows, some in full flower. The glistening mucilaginous drops on the leaf tentacles attract insects to their doom. We saw one leaf which had snared a hapless softbodied bug. In another day or so Mr. Bug will be absorbed and the leaf ready for the next ill-fated "customer."

The outdoorsman has a slightly uneasy feeling when he finds himself treading the surface of a "quaking" bog which is actually quaking. It's almost the same sensation as walking around on a bed. In one spot one of my half boots got mired and didn't want to come out of the oozing muck. I leaned on my walking stick for support. The cane started on down to China and I very nearly "leaned" flat on my face before I managed to flounder out of that tricky spot.

One or two grass pinks and a single purple fringed orchis were the score for this swamp. I walked right past the grass pinks and never saw them. Another member of the gang, coming by a half hour later, spotted them immediately. We drove a half dozen miles and struck into another swamp. Here the wading was worse and there were no orchids, but a magnificent station of Turk's-cap lilies lorded it over a wide area.

I was floundering about in this swamp wondering what to do if a giant snapping turtle took hold of my toes when a marsh bird of some sort set up a loud squawk practically under my feet. I headed that way and the cackling kept on but a few feet before me, always just out of reach. I tried rushing the sound in an effort to flush out the bird, but with no success. It was probably one of the rails, our shyest birds, with a full set of his own road maps for skulking around amid those bulrush jungles.

The swamp candles held up their erect yellow clusters of bloom to light up this marsh. In the open water a



colony of spatterdocks displayed the unimposing yellow "water lily" flowers. I saw a few sundrops open to the sun and several plants of the steeple bush. False sunflower was much in evidence in the thickets where the footing was more solid.

The last bog of the day was the most extensive of the three. Loose stones of the glacial moraine were all about the upper limits, giving some hints as to the origin and character of this marsh. Here was where the poison sumac grew in sizeable thickets, hiding its sinister nature beneath a veneer of deceptive innocence. It is a symmetrical, quite attractive shrub, growing an average ten or twelve feet tall, with quite noticeable red leaf stalks. I did some fancy ducking while passing through this thicket, for this sumac is doubtless the most poisonous plant in the whole region.

My luck ran good in this last foray. Hidden in against an alder shrub, I discovered a grass pink with perhaps a half-dozen perfect blooms. Somebody dared me to eat a choke-cherry or two from a cluster hanging ripe near this spot. I did, and nearly lost my partial plate in the ensuing pucker.



Of all the nocturnal creatures who promenade across our midnight lawns the dull-witted 'possum is certainly the most unattractive. One of these long-nosed scavengers came foraging in a flood-lighted area one recent evening. Our collie made a dash at him and he folded promptly into the "deadest" and ugliest visitor of the summer. The raccoons hereabouts are roguishly handsome, and the skunks are real dandies, but the 'possum has been short-changed so far as personal glamor is concerned.

In the first place he looks too much like a rat. His nearly naked tail, tiny eyes and long flexible nose were not designed to win any beauty contests. Coon hunters despise him, while gentlemen of color catch him alive, fatten him on bread and yams and apples and roast him to a turn, declaring there is no tastier meat.

I'm always amazed at how dead a 'possum can look when working his ancient ruse. Our visitor lay on his side with his gums drawn back from his glistening white teeth. He looked like he might have been dead for a month. His fur had a sort of wind-blown appearance, as though it had been exposed to wind and weather for many weeks.

We called off the collie and awaited developments. In a few moments came the resurrection. I didn't see Gabriel nor did I hear his muted horn, but that lately defunct 'possum surely did. First he raised his head, sniffing for news. Then he got slowly and unconcernedly to his feet and moseyed off, as though it was all part of the night's work.

We sent the dog in again and br'er 'possum went right back into his act, dead as a dodo, and twice as ugly. Again came the all clear signal and he slowly breathed life into his sleeping limbs and took himself off into the surrounding darkness. So long as he stays out of my corn patch all will be serene.

My wife talked herself into coming along on a weekend ramble. She loaded sandwiches and a thermos of tea into the car and we set out for the hinterlands. The day was sticky and murky and humid, ever threatening showers which did not arrive until the very moment we planned picnic supper, when they forced us back into the car.

Shod in knee boots we spent an hour or so exploring the bed of a wide, lazy stream which has thrown its coils about the ankles of the timbered hills. A myriad crayfish scuttled backwards as we waded past, roiling up the bottom as they sought safety under stones and in the dim recesses of their "caves." Giant water spiders ran under the door stones at our approach.

There were many dragon flies and damsel flies hunting a living over the eddies. The white-tailed dragon fly and the big fellow called the green darner were flying everywhere. Great patches of water willow had homesteaded the shallow flats, and were already showing a few of the gorgeous blooms. Monkey-flower displayed its grinning blossoms on the moist banks.

As my wife pushed under some sycamore branches overhanging a quiet pool a watersnake suddenly dropped into the water before her. Right there she threatened loudly to quit the expedition, but I restored harmony by promising to go ahead and jar off any more snakes sleeping in the branches. A box turtle by the creekside cast a baleful red eye at us. He's supposed to loaf around in the woods, and not in creek beds.

We came out of the creek via a fishermen's path to the nearby roadway. The summer roadsides are already wearing a slatternly down-at-heels look. A heavy burden of dust lay over the poison ivy and dogbane and sycamore sprouts along the way. Wild bergamot had climbed the hill from the moist bottom edgings and had painted a wild pasture acreage with light-lavendar pastel beauty.

At our feet a milliped rustled along —a dry rasping creature in the arid roadway wastes which fairly panted for the refreshing shower even then just over the next hill.

There is no mistaking the fact that summer has arrived when the roadside chicory hangs its dew-kissed banners to delight the early morning motorist, or the strolling countryman abroad with the July dawning. It shows a decided preference for limestone soil, and once established, creates oases of misty blue beauty on unsightly dumps, vacant lots and down-at-heel thoroughfares. Only the early riser sees this azure glory in all its morning freshness, for the chicory knocks off at noon, closing the flower show for the day. Early to bed and early to rise is its motto.

Many folks are unknowingly quite well acquainted with the chicory, for its dried and ground root has long been used as an adulterant in coffee. The plant is an immigrant, and probably came to this country in the earthen ballast of the sailing brigs of pioneer days. Since arrival here it has rolled back frontiers with reckless abandon.

There is no other blue in the open quite like the hue of the chicory's "blue sailors" when in massed bloom, unless it be the sky above. Artists are fascinated by the color and struggle vainly to reproduce it on canvas. Poets have kept a warm spot for this "peasant posy." It's a leading performer in the early summer pageantry, and when once seen shimmering with blue radiance in early morning sunlight can never be forgotten.

Spurts of orange flame are flaring again in the old-field tangles, another sign of summer's arrival. The gorgeous butterfly weed has caught fire from the July sun and is smouldering suddenly across the countryside. Daring butterflies delight to play with this fire all day long, soothing the scorching they must receive with long cool draughts of refreshing nectar.

But perhaps the best tip-off that "summer is a-comin' in" stems from the loud-mouthed cicada who is once more beating his drums in the treetops. He's a born press agent, and his shrilling is very much a part of drowsy summer days. Some folks call him locust or harvest-man, but every-



one who gets outdoors in July knows this big, blundering, bulgy-eyed insect.

A weekend ramble down a shady July lane in the timber hills took us past verdant banks where the purple flowering raspberry was blooming and the American spikenard had established colonies of tremendous plants in the rich loam. A bobwhite paged himself at intervals from the edge of a neighboring grain field. High overhead a pair of buzzards rode the updrafts with effortless ease.

We sprawled at ease beside a hidden spring and watched a groundhog eye us warily from the safe depths of the entrance-way to his burrow. A hummingbird worked over the pendant flowers in a clump of jewel weed near by. A black and white warbler, first I had seen this year, flew in to work over the trees just opposite. This little fellow creeps around trunks and limbs with all the assurance and nonchalance of a nuthatch.

Basswood was nearing the end of its flowering, but the honeybees refused to believe that the show was over. We didn't have to look up to know when we were passing another linden tree. The busy bees set up such a happy murmuring that each basswood sounded like a miniature factory there in the shady forest aisles. My friend the old "sang" hunter stoutly maintains that linden honey is the "best they is."

We spread picnic supper beneath a wide oak far back from the roadway. Ants and a wasp or two and some stray flies moved in to share the repast. Dinner music was by courtesy of the local chewink choral society. The site was air conditioned, the breeze even throwing in the fragrance from a fresh-cut hayfield near by. Amid all this luxury I munched lazily on a sandwich and pondered the sanity of the hurried folk knocking themselves out on holiday highways across the land.

. . . *The End*

State's Largest Furbearer Was Here In Dim Past

The beaver was abundant over the waters of this part of the country when the first white trappers came to take its valuable pelt. However, these hydraulic engineers became extinct as a wild fur species of this state about the middle of the last century.

The Game Commission purchased and released 100 beavers between 1918 and 1925. Given protection until 1934, these large, water-going rodents have since provided an excellent fur harvest annually in the state, except for 1953 when there was no open season on them.

Recently, Floyd C. Meade, of Moscow, Lackawanna County, provided proof, these, our largest furbearers, were here "away back when." He produced a sample of peat taken from the Moscow area under eight feet of which were found beaver chips and cuttings.

Geologists suggest these bits of evidence could be from 10,000 to 30,000 years old, indicating how long the forebears of present-day beavers have been native to the area now known as Pennsylvania.

Meet Mister Monax—



Pennsylvania's Biggest Little Game Animal

Fish & Wildlife Service Photo

By Ed Shearer

IN THE minds of many Mr. Monax (alias woodchuck, groundhog or whistle pig) is rapidly going to the top of the list of live targets for the rifle. His followers number in the thousands and no more enthusiastic sportsmen can be found anywhere in Penn's woods or fields.

As a prophet of seasons, Monax has no peer. Upon his appointed day each February, thousands of people await his decision as to whether spring will soon be here. But whether you are one of the faithful or one of the skeptics, there is one thing you can rely on. When the woodchuck forsakes his winter den and establishes his spring and summer quarters, the world takes on new life. It is the time of glorious warm spring days, buds bursting their petals, and the newly arrived birds choosing their mates and making homes. The outdoors fires your blood—it is the time of the fly rod and the scope-sighted precision rifle.

Little realized by the general run of shooters is the stellar role Mr. Monax has played in the development of modern long range accuracy. From the days of Dr. Mann, Leopold, Adolph Niedner and Harry Pope down to the present time, the driving passion among varmint enthusiasts has been to produce a rifle and cartridge that would knock the eye out of a chuck at three or four hundred yards. The tremendous revival of bench rest shooting is due in large part to the thirst of chuck hunters for

more accuracy and speed at longer ranges.

From an economic standpoint the woodchuck is assuming impressive proportions as a monetary asset. Countless dollars are being spent annually by chuck hunters to the benefit of Pennsylvania businessmen. Several thousand target shooters buy hunting licenses to hunt for chucks only.

Even in national defense this remarkable little marmot makes his importance felt. The Korean war taught us that the price of not being able to stalk and shoot is needless waste of American blood. It's a lesson we have had to learn all over again in every war, yet they say Yankees are smart. General Merrit A. Edson, commander of the famed Marine Raiders, claims, "The most deadly combination in combat is a good rifle in the hands of a good stalker who can shoot it." As an instructor in this stalking —shooting game, Mr. Monax is tops.

On the debit side it is admitted that the woodchuck does a certain amount of damage on the farm. Under certain conditions, some control is necessary. But on the other hand, deer, bears and other game animals hand out the same amount of grief in this department and there is no more reason for wiping out one species than another. In short, it's about time we stop calling Mr. Monax a varmint and recognize him for what he is—a great little game animal.

There are seven subspecies of woodchucks but the particular chuck we deal with in Pennsylvania is the southern woodchuck. Hibernation here usually starts in October or November, depending on the weather. In common with other "sleepers" the body functions of the chuck are reduced to a very low level, the heart beat slowing down and respiration dropping to a point that just sustains life. No food passes into or out of the body during this period which may last from two to six months depending on the climate and advance of spring. When temperatures rise and need for food demands, Mr. Chuck bestirs himself. He emerges from his winter den with a ravenous appetite. At this time caution is at low ebb and he is easy picking for the man with a gun. Soon the female has her family which may number from two to five. When these little chucks come above ground, they will weigh from a half to a pound and a half, are quite helpless, and if the mother is killed, will slowly starve to death.

In shape a woodchuck resembles a mammoth squirrel. He has a heavy set body with a short, broad head. The brain cavity is small and well protected by the skull. The brain pan is little longer than wide, a small target of about one and a half inches on large chucks. Southern woodchucks average about seven pounds in weight under good conditions but some individuals may come double that weight.

The woodchuck is a realist in selection of his home sites. The winter quarters are made in a deep den on a hillside facing east or southeast where the sun warms it in the morning and the hill shelters it from the cold north wind. The temperature in woodchuck winter dens remains almost a constant 32 degrees.

In spring and summer, Mr. Monax moves his home right into his restaurant. Right out in a clover field, the edge of a pasture, he loafs, eats and sleeps near his burrow, taking on fat for the winter snooze and ready at all times to make a swift escape from his enemies. The southern chuck is sought by many pursuers, other than man—the foxes, large hawks, owls and dogs. It takes a husky dog, however, to handle a full grown chuck. But in spite of his array of enemies, Mr. Monax has held his own.

There are several methods of hunting this wily little marmot. Probably the most popular system involves



Hal Harrison Photo

Chuck hunters don't hit them all.

watching a field that has been prospected—the dens and ranges previously located. The second consists of roaming over the country in search of chucks, then stalking them within range after they are spotted. A third method which is attracting a large number of hunters each year centers about cruising back country roads by car until a chuck is sighted, then leaving the vehicle parked safely while the hunter dismounts and assumes the proper shooting position.

The first method of watching a clover field, pasture or other piece of country is a favorite practice of the farm boy and the real chuck expert alike. Both types of hunters have one thing in common. They know the chucks are there. They waste no time in searching barren country and they usually have their country prospected well ahead of time. Many times they will even go so far as to map the location of dens and select firing points from the standpoint of visibility, background security, and comfortable, safe firing positions. They should be careful to select these positions so that their heads are not skylined, thus reducing the hazard of having some tyro or numbskull hunter from mistaking them for a chuck.

There is another thing an old-hand invariably does on a set-up of this



Hal Harrison Photo

This is how it's done—sometimes. As the groundhog (left circle) sticks its head out of the burrow, the waiting hunter (right circle) is all set for the shot. If he misses, there will be no second chance.

kind. He paces the distances from his firing point to the dens and marks these ranges down in his notebook. This type shooter will generally have a high percentage of kills per shots fired and will make some very long range kills. He knows his range on any shot offered and consequently has only the wind problem to solve.

This type hunting is made for the man who enjoys the beauty and quiet of the countryside. He enjoys the sunlight of early morning and receives the dividends of glorious sunsets. He sees nature in her softest mood. If there be poetry in hunting, this is it.

The second method of chuck hunting involves moving carefully over the terrain, trying to see the woodchuck before he sees you and then maneuvering into position for a shot. This is the true stalking method and is by far most used by the man who aspires to a degree of skill approaching perfection. The intelligent stalker soon realizes that the kill is of secondary importance. It is the developing and testing of his skill in outwitting game that is the real goal.

To be a successful, stalker, you must develop an ability to see game in its natural surroundings. You must also recognize different kinds of cover and be able to take advantage of them. Generally, cover can be classified in two types. One is made up of solid objects like stone walls, trees, stumps, and mounds which conceal you completely from an animal's sight. The other type of cover merely breaks your outline and screens your movements by shadows, intermittent lines or colors. This cover may be grass, leaves, brush, or other things which give the quarry only fleeting glimpses of your body outline. It takes both skill and practice to use this kind of cover successfully. In effect, you must be able to blend with your background, to confuse the eye by camouflaging your normal appearance.

Movement is of great importance. Birds and animals do not see colors as man does but they pick up movement very quickly. Their lives depend on their ability to discern motion in their surroundings and to do some-

thing about it fast. Animals, from a buck sneaking around you in the brush to a cat after a bird on the lawn, go slow in cover and fast across open places. There is no doubt that stalking woodchucks is an art, a skill not learned by everyone. It takes an ability to read and understand terrain, stealth to move through it unobtrusively, eyesight that can see every little detail, and marksmanship to hit what you see.

The third method, one that is gaining in popularity, consists of cruising the back roads in "chuck-land," scanning the countryside until a chuck is sighted. It is a good method to use in strange country because you can cover a lot of ground while your car does all the work. You stop at every likely looking vantage point and thoroughly cover the surrounding terrain with as good a pair of binoculars as you can afford. You can relax, watch the changing scenery, and converse to your heart's content. When Mr. Monax appears, you dismount from the car and do your shooting from a safe position nearby. It's illegal, of course, to shoot from the car —and for good reason.

This type shooting is apt to involve rather long ranges, particularly if the chucks have been much shot at. My notebook tends to indicate that under these conditions range averages close to 250 yards, which calls for a very accurate, flat shooting rifle plus a good scope with fine cross-hairs. On the other hand, you usually have time to pick a good shooting position, discuss the wind, and your pal can spot your shots for you. You are far enough away so that the chuck is not too nervous.

When it comes to the best rifles for chuck hunting, any writer is treading on dangerous ground in recommending models or types. There are many in the varmint clan who strongly contend that in order to kill a chuck at over 100 yards, you must have a rifle built by a celebrated custom rifle maker. They say your rifle must be chambered for a cartridge whose virtues are manifold and faults are non-existent. They speak of the beauty of the wood grain, the graceful lines, and superb accuracy of this rifle.

Belonging to the "John Doe, Richard Roe" class myself and being a graduate of the hard-boiled school of small bore shooters, my aesthetic senses are sadly under-developed. To me the finest and most beautiful chuck rifle is one that keeps its groups closer than an old-time family and one that doesn't put a mortgage on the homestead. And since I write for the average shooter and the beginner, some two years ago I began experimenting with some of our best factory rifles bought across the counter. The record shows that to date, the Model 70 Winchester in the 220 Swift, 250 Savage and 257 Roberts together with the Remington 722 rifle in the 222 and 257 calibers will shoot right along with the custom rifles of the better makers from a pure accuracy standpoint.

It has been my experience with run of the mill factory ammunition that you run out of size at about 200 yards although some lots will do better. From here on it's a handloading proposition if you want those small groups. A real chuck rifle must stay within one minute of angle (or one inch per hundred yards) to qualify. Furthermore, the scope must be of sufficient quality to enable you to see better than your rifle will group. This is one of the real secrets of small groups.

Don't expect to buy a 220 Swift and a box of cartridges across the counter or put ordinary handloads in your rifle, then hit chucks at 300 yards. The rifle just won't do it nor will the custom rifle, either. That kind of accuracy comes from fitting a load to your particular rifle, carefully selecting the components, skillfully assembling them in the cartridge

case, and finding out which combination your rifle shoots best. This is most important for without such care and testing, neither your factory rifle nor a custom rifle will be worth a "hoot up a dark hollow" on chucks out further than about 250 yards.

So to the budding chuck hunter with a yen for far shots there are two choices. You can buy yourself a set of good reloading equipment, books, and tools, then learn through trial and error how to load "tack hole" ammunition. Or you can talk some custom handloader into developing a load for your rifle.

A four power hunting scope with medium cross-hairs is effective on crows to 200 yards and chucks to around 225 yards. With a good grade scope you can see the game but your cross-hairs may cover the target so that you don't know quite where you are holding. The average medium sized cross-hairs cover about 1½ inches per hundred yards. You will get some misses due to this difficulty but that is the price of a combination hunting and varmint scope.

A real varmint scope should have either cross-hairs or a dot that allow you to hold on the exact spot you expect to hit. This calls for one-half minute of angle cross-hairs or dot because in this size you can hold on chucks at 300 yards yet still see where you are holding.

For a very accurate rifle, a good six power scope with medium fine X-hairs or dot will give you good visibility at 300 yards under very good light conditions. But from about 250 yards on out the big scopes start to really come into their own. It also starts to cost you important money. The scope I have used most for this type shooting is a Unertle Ultra Varmint 12 power with a two inch objective lens in target mounts. It has medium fine X-hairs and enables me to pick

Groundhog hunters use a wide variety of rifles and ammunition. The "best" rifle is strictly a matter of personal choice.

Hal Harrison Photo



up chucks against bad backgrounds as far as I want to throw a cartridge. This type scope costs as much as a good rifle, of course, but they are a lifetime proposition. There are several of these scopes on the market, all very good, but the beginner won't need one for a long time.

There are some ideas I wish every chuck hunter would take afield with him and put into practice. The term "long range" is relative. A better term might be "the margin of your personal skill." Forget about the boasts of the other fellow who claims he can get them "way out yonder." Concentrate on developing your skill by practicing, then increasing the ranges as your shooting improves.

Regard the farmer as your host and strive to make him your friend. You do not endanger the families, destroy the property, damage the crops, or frighten the livestock of your friends. Your hope of a woodchuck haven lies with the farmer even as his opinion of all hunters rests squarely on your shoulders.

Last, but not least, look at your backgrounds before you shoot. Be sure it's a chuck before you pull the trigger. There is absolutely no excuse for shooting a man, or any other living thing, in mistake for a woodchuck. The only thing in this world that looks like a chuck is another chuck. Anything else is merely an unidentified object which should be studied and watched until you can definitely identify it by name. And in order to safeguard yourself and make it easy for others to identify you, wear a flourescent cap in bright red or yellow. Best color by test, however, is "fire orange." Finally, leave some seed stock in the chuck population for next year. Shoot all you want as long as you shoot safely and don't shoot all the chucks you see.

. . . *The End*

GAME CASES INCREASE IN PROPORTION TO HUNTER NUMBERS

Men experienced in wildlife matters often remark that the true sportsmen of the outdoors far outnumber the game law violators. These observers are agreed, however, that so long as men hunt wild birds and animals the need for vigilant game law enforcement will continue, human nature being what it is. The ensuing history bears this out and appears to indicate violations occur in numbers proportionate to gunning and trapping pressures exerted on wildlife.

On May 26, 1924, a prosecution numbering system was instituted by the Game Commission. Case No. 1 under the new system came from Clearfield County. It involved a man whose dog chased game in close season. On January 2, 1954—nearly 30 years later—game law prosecution No. 100,000 was filed at Harrisburg. The violator in this case was apprehended in Montgomery County. The charge was "Assisting in the concealment of an illegally killed deer."

In the first fiscal year of the system (1924-25) there were 2,200 game law prosecutions brought. Penalties collected totaled almost $42,150. In the Commission's last fiscal year, ending May 31, 1953, there were 5,041 such prosecutions. The fines for that year aggregated $161,735. Here is evidence that Pennsylvania's corps of game protectors kept pace with developments.

In 1953, the record shows that 61% of the apprehensions were made in November and December, in the so-called "game season months." Strikingly, nearly two-fifths of the cases were spread over the remainder of the year. In the last calendar year about 98% of Pennsylvania's game law cases were successfully prosecuted.

Experience and Planning Mean a Successful Field Day

By Marian Potter



Warren Field and Stream Club Emphasizes Sportsmanship and Conservation

ONE of the final outings of the summer for many families in the Warren area is Field Day which the Warren Field and Stream Club has conducted for the past nine years at Irvine, Pennsylvania. Wilder Field, the recreational tract of the National Forge and Ordnance Company, is a beautiful setting for the event which has attracted as high as 10,000 people in a single day. The hill-surrounded field enclosed by a border of pines has ample space for setting up the marksmanship ranges, conservation exhibits, lunch stands, bleachers and pony rides that mean fun for the whole family.

Net returns to the organization from Field Day have ranged from $1000 to $1800 annually, and this money is used to advance the club's projects which have included: fish stocking, aid in establishing Chapman State Park, founding Spring Creek Fishing Paradise, providing wildlife food and cover stock, seed distribution, tree planting, scholarships for conservation students and transportation for the field trips of the Warren High School conservation class.

Plans for Field Day begin in January when a general chairman and about fifty sub-chairmen are selected from the club's membership of about

1800 men. Duties of sub-chairmen are specific, and each stand, exhibit, game, or service at the field runs with the smoothness that comes from experience and careful planning.

The general chairman begins early in his efforts to book a special entertainment feature in keeping with the theme of the day. Some of these have been the Heather Highlanders of Youngstown, Ohio, a band of girl pipers; the champion chopper and axe-thrower of New York State; exhibition of rifle, pistol and shot-gun shooting by experts from armament firms; plug and fly-casting experts; FBI marksmen; and dogs trained for police work by the Pennsylvania State Police. At the most recent Field Day, a group of local young people were featured in an exhibition square dance. This country dancing was enjoyed especially by the older people, even though one elderly man as he hobbled away on rheumatic legs at the close of the show declared that he could still "out-dance 'em."

Tents to house all the stands and exhibits are rented from a neighboring fair association. One of the most popular stands is the Fox Hole Inn which served 2500 hamburgers and hot dogs and barrels of coffee at the most recent Field Day. Under the direction of Frank Reese of Warren and his 16 assistants, stoves, coffee makers and soft drink coolers are set up in the big tent, and onion chopping begins early in the morning of Field Day. Stoves which burn bottle gas belong to the Field and Stream Club and were custom-made in Warren plants. When not in use, they are dismantled and stored in the club's warehouse along with the steel soft-drink coolers which were also fabricated in Warren plants. The club has a complete supply of field cooking utensils.

Games which are set up in tents in mid-way formation were designed by club members and made by them. One of the most popular ones with children has been a dart game with a board of large dots as targets. Children throw until they win. Not infrequently a patient attendant guides a small hand within a few inches of a target.

Attendants also help at the marksmanship ranges where youths are sometimes handling a rifle or pistol for the first time. Although firearms manufacturers and fishing equipment makers do not have commercial exhibits of their products at the field, experts in the use of this equipment are usually present to demonstrate its proper use.

The club carries liability insurance on spectators but none on its own members assisting with Field Day. So far, the only casualties to attendants have been cases of poison ivy suffered by two whose duty it was to adjust and inspect rifle targets back beyond the mowed area of the field.

An effort is made each year to vary target ranges with some novelty. Moving targets such as a balloon slowly propelled by a small motor have been well liked. This past year bowmen tested their skill on a large target shaped like a chicken and were awarded live chickens for prize shots while riflemen aiming at a life-size

A young archer tries his skill at the Warren Field and Stream Field Day.

Photo by the Author





Photo by the Author

The rifle range is always a center of interest.

deer target hoped to explode a dynamite cap concealed behind a vital part of the body and thus receive an extra award. Anglers strove to place plugs and flies inside automobile casings placed on the ground or through those hung above the ground.

Donald Taft, an employee of the U. S. Forest Service, who has been general chairman of Field Day for the past four years is aware of the educational possibilities of the day and has stressed good conservation exhibits. The Forest Service and Pennsylvania Department of Forests and Waters prepare exhibits and use the opportunity at the beginning of the fall fire season to demonstrate the need for care against fire in the woodlands. The Game Commission has a token exhibit of wildlife while the U. S. Fish and Wildlife Service has on hand a fish tank truck of live trout from its fish hatchery at Farnsworth. The Valley View Mink Farm of Chandlers Valley often displays its furbearers. Last year local sportsmen brought in a number of live rattlesnakes, one of which very considerately gave birth to a number of young the morning of Field Day, thus adding an extra attraction.

Students of the Warren High School whose course in conservation was originated by the Field and Stream Club have an opportunity to assist their sponsors by helping to direct parking at Wilder Field. Between $2000 and $2500 are required to put on Field Day. Expenses include such things as a day's rental of a dozen Shetland ponies from a nearby amusement park to give free pony rides to children.

The Warren club has been fortunate in never having had a wet day for their big event. Most Field Days have come on those beautiful Indian summer days that give Pennsylvanians a chance to boast about their climate as well as their sportsmen. . . . *The End*

The Road to Conservation

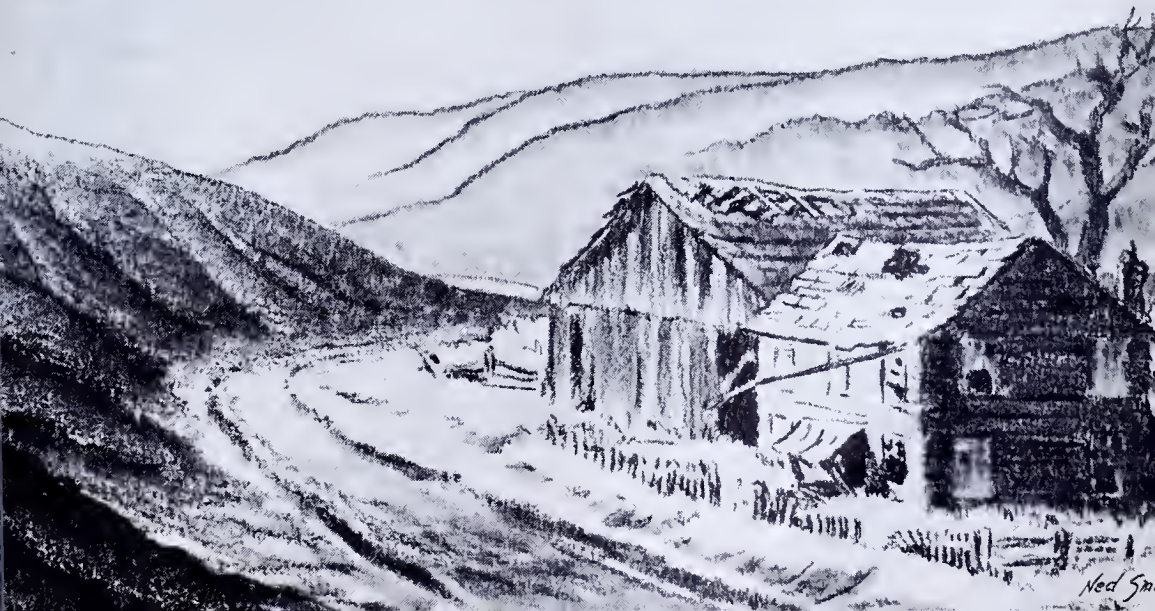
Terracing—Past and Present

By Ivan McKeever

SHOULD you attempt to see terraces and the remains of terraces that have been built throughout the ages you would have a long and interesting trip. In order to see some of the best examples of ancient terrace construction you would travel to some of the most remote lands of the world. You would want to visit the inaccessable mountains of Luzon and inspect the Ifugao rich terraces of the Philippines. These stone wall terraces are the highest, best built and most extensive in the world. They cover 250 square miles and are an admirable engineering feat. Placed end to end they would probably reach half way round the world.

In traveling to learn of the ancient terraces you would not want to miss, if conditions permitted, a trip to the mountain fastnesses of the Yangtse Valley where the aboriginal inhabitants were driven by the Mongol conquerors untold centuries ago. It was here, at about 10,000 feet above sea level, that the Tze or "untamable worms" as they were called by the Mongols, perched their villages on the steep cliffs. In order to survive under such conditions it was necessary that they use every available bit of soil. Perhaps here the most spectacular terraces ever constructed were built on the steep mountainsides. Sometimes terraces were so inaccessable that it was necessary to reach them by means of a rope.

Other examples of terraces, as they were used in Asia and Europe, served to convince us that most early people recognized the importance of terraces to prevent erosion. Terracing was practiced around the Mediterranean Sea and in Britain during the Bronze Age. In Japan terracing became a common practice a long time ago. When the Arabs reached Spain in the 10th Century, they covered many of the mountain slopes in a succession of terraces. In the mountains of India, Ceylon and Tibet terracing was also practiced on a large scale. The Chinese farmers made a special effort to take care of their land. These early Chinese found terracing to be one of their most important conservation practices. Soil was often collected in baskets in the valley and carried up the slopes to fill in behind the terrace walls.





SCS Photo

This terraced valley above Becharre, in Lebanon, is pictured in remarkable detail. This was a place of refuge for Christians and is a good example of how some people, driven to the hills for protection, were able to develop an adequate agriculture for survival.

The best example of early terracing in the Western Hemisphere can be found in Peru. Long before the Spanish conquest in the 16th Century, the Inca Indians had done more to bring about absolute soil conservation than can be found anywhere in the Western Hemisphere even to this day. Without tools and machines, such as we have, they constructed irrigation channels, large aqueducts, terraces, and diversions. Many of these structures are still in use.

Ancient terraces were, for the most part, bench type in structure. The walls were built sometimes perpendicular and sometimes sloping. The soil was then filled in until it was level with the top of the wall. The small areas of land formed by this type of terracing had its drawbacks but it did make possible irrigation. Intensive cultivation was often carried out in order to provide the maximum amount of food production. In addition, these early Peruvians used certain types of crop field terraces similar to those constructed today. In many instances these were more ditch-like in nature but were built on a grade around the slope. Ancient peoples undoubtedly considered ditch-like terraces a soil conservation practice and a necessity if farming was to be carried on at all.

Strange as it may seem on first thought, many of our ancient civilizations developed in the mountains. Certain writers and conservations have pointed out that it was necessary to farm these steep slopes because of a scarcity of good land. The actual facts, however, do not seem to bear out these conclusions since in most areas where elaborate terraces were constructed there was much good

land on gentle slopes not too far away merely waiting to be cleared and farmed. The chances are that the people preferred to live in the inaccessable hills in order to be protected against marauding invaders. It wasn't easy to live on the plains because of the difficulty in providing protection against attacks by wandering tribes. Also, the mountain fastnesses made protection easier from the threat of wild beasts. In Luzon we find that the great and well constructed rice terraces were built by a band of people who had been driven by invaders from the plains into the mountains. In the high Yangtse the terraces were built by early Chinese who had escaped from the plundering Mongols. Since these early people had to live in the mountain for protection they had no alternative but to build terraces in order to grow the food necessary to survive.

There has been little learned about the types of terraces in the last several hundred years except in the matter of refinement. Modern type American terraces are similar to some ancient terraces in that they pick up the water at intervals on the slope and lead it off gently thus protecting the land from serious erosion. They are different in that they are designed to permit modern farm machinery to move freely across the terrace ridge whereas most ancient interceptor terraces were more ditch-like in nature.

Our modern American terraces are an outgrowth of ditch-like terraces first used in this country during the late Colonial period. Terraces were first used in modern America in the southeastern part of the country. The need for something to prevent erosion was obvious due to the erodible soils found in the more fertile areas of our southeastern states. Progressive farmers found, by trial and error, that ditches around the slope picked up the surplus water and thereby protected their land from erosion. Some historians give credit to certain farmers for making this discovery entirely on their own. Perhaps a more accurate analysis would credit these farmers with picking up the ideas in their travels to certain parts of Europe and Asia. At any rate, terraces of the ditch type method became common in the 17th Century and were improved and expanded continuously from that day to this.

John C. Calhoun was very interested in soil conservation. Among the practices used on his plantation, "Fort Hill," were ditch type terraces. This type of terrace was installed over all his sloping cropland. As a result of his care Calhoun's land is said to have shown few signs of erosion. Many of his neighbors accepted some of the conservation practices but none of them did as complete a conservation job as did Mr. Calhoun.

Another southern planter who did much for conservation was John Taylor of Virginia. Mr. Taylor was an acquaintance and friend of Thomas Jefferson who was also an ardent conservationist. Mr. Taylor constructed a system of drainage and hillside ditches on his Rappahannock River farm near Port Royal, Virginia.

Pennsylvania was represented among the early conservationists by John Lorain. Mr. Lorain was a native of Maryland. Later in life he became an active member of the Philadelphia Agricultural Society. In 1806 he purchased land in Pennsylvania and farmed in the vicinity of Phillipsburg. He wrote thirteen essays on various agricultural subjects. Mr. Lorain had the idea, generally accepted by most present day conservationists, that land can be used and still conserved. Systems of water diversions were constructed on his farm by careful survey according to the lay of the ground. He believed that they should be laid out properly even though it was sometimes necessary to run them in serpentine courses.

The early ditch methods of terrace

construction for cropland was continually improved. As time passed the farmers discovered that the broader type terraces permitted freer movement across the terraces with farm machinery.

After the Soil Conservation Service became organized in the early 1930's, terracing came in for even more attention. The Soil Conservation Service's approach to the conservation problem, based on proper land use and a combination of practices, placed terraces in a key position in conservation farming. In developing a complete conservation plan therefore, ditch type field terraces, long used as a means of removing surplus water, became a basic practice. Since erosion is caused by improper land use and surplus water, (accumulated by hard or prolonged rains), the foundation for any conservation plan seemed to rest on some sort of system that would remove this surplus water without damage to the land. Regular terrace systems have a two-fold purpose on many Pennsylvania soils that are inclined to be wet. On these kinds of soils they not only protect the land against sheet erosion but remove subsurface water thus making it easier to farm the land. Also, most crops do better when the soils have been drained.

Terrace systems as they are known, are laid out systematically on grades. This grade varies usually from one-tenth to five-tenths per cent. They are placed around the slope at horizontal intervals of about sixty-five to seventy feet apart. All modern ter-



SCS Photo

Other countries are following the lead of the United States. Here we see modern type terraces being built in Venezuela under the technical supervision of SCS employees.



SCS Photo

Terraces on a Lancaster County, Pennsylvania, farm. Terraces are supplemented with strip cropping and good grass waterways. Shown above is the Arthur Weaver farm near Hensel on Highway Route 72.

races are constructed with a wide base and smooth curves so that they can be farmed just the same as the remainder of the field. All farming operations, including tillage, is carried out parallel with the terrace.

The diversion type terrace, often referred to as a "diversion" is just another application of the terracing principle. Diversions, however, are spaced further apart and are supplemented with a protective cover of grass and a filter strip of grass extending at least thirty feet from the diversion channel on the upper slope. Diversions are given a grade of from four-tenths to two per cent. They are usually bigger than the terraces in regular terrace systems but answer the same purpose as regular terraces. They are used primarily on land too steep for a regular terrace system. Properly and rightfully they should be considered diversion type terraces. Stripcropping is usually used as a supplemental practice to diversions.

The construction of terrace systems or diversion terraces is dependent upon proper outlets to dispose of the accumulated water. Many times there will be natural locations where the water can be disposed of without damage to the land. A well sodded ravine or draw is often available. In other cases terraces and diversions can be emptied into the woodland or in good pasture. In many cases it will be necessary to construct and seed waterways well in advance of the terrace construction so that there will be a place to empty the surplus water. These waterways should be well designed and constructed. They should then be adequately limed and fertilized and seeded to a grass mixture that will make a good cover. The grass used should be turf-forming rather than bunchy. Adequate time should be given for the waterway to become a dense sod before the extra water is collected. Periodic fertilizing and mowing will keep all grass waterways, whether natural or constructed, in better condition. They should never be used as a farm roadway. We should be very cautious in installing terraces and diversions until we have satisfactory locations for emptying the surplus water otherwise serious gullying may occur which may do more

damage than if no terraces or diversions had been constructed.

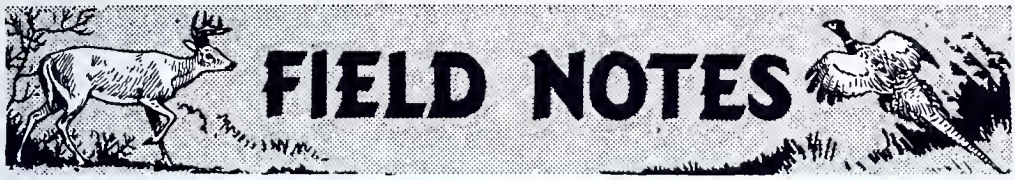
Diversion terraces and watercourses have been successfully constructed with many different kinds of machinery. Some manufacturers have constructed special terracing machines. Ordinarily, these terracing machines are pulled behind wheel tractors. The big, one-man operated, patrol graders have proven very excellent terrace builders. Many farmers have constructed terraces with regular farm plows. Bulldozers and angle dozers are also being used extensively in many Pennsylvania soil conservation districts for terrace and diversion construction.

Terraces should not be expected to do more than is intended of them. The job of terraces is to remove the surplus water without damage to the land. They are not soil builders; therefore in any conservation program it is necessary to supplement them with strip cropping, contouring, good rotations (which include grasses and legumes to build organic matter), and the use of sufficient lime and fertilizer to take care of soil and crop requirements.

The proper use of terraces, whether they be regular terrace systems or diversion type terraces, means much in protecting valuable farm land. Every conservation program should be designed to protect the land during the unusual rain. Terrace systems do much to prevent the loss of topsoil. This topsoil, once lost, becomes a problem in the streams. One of the serious aftermaths of this silt is the damage done to the natural habitat of fish. By keeping the soil and the fertility on the land we help insure better crops and this includes the crop of wildlife.

Cropland terraces and diversions are common in Pennsylvania. Approximately one hundred sixty miles of cropland terraces have been installed on the farms of those cooperating with Pennsylvania's thirty soil conservation districts. On these same cooperators' farms an additional five hundred twenty-five miles of diversion terraces have been constructed.

This discussion on terraces is not intended as a technical treatise on terrace construction but rather an analysis on the history and logic of terracing—a logic that has been understood by people of many races and in many countries for thousands of years. The very fundamental of controlling surplus water on cropland, so easily understood by the half-naked tribes on the high mountains of Luzon 2,000 years ago, should be much better understood by our present day agriculturists and farmers. Do we appreciate even yet, with all the interest and all the money being spent on conservation, the real fundamentals of what it takes to save the topsoil? Finally, do we want a standard of living and a food supply based upon subsoil? We have much to learn evidently, if not scientifically then practically, in getting important conservation programs on the land. Water disposal systems are fundamental—that is, some provision for removing the surplus water that causes erosion. Technicians and farmers alike have a real problem in fitting time-honored practices such as terracing to our present day concept of true erosion control programs. We are faced with a real challenge. This challenge could be stated in the form of a question. Are we as modern day agriculturists and farmers going to do a second rate job of conservation as compared with those far less civilized people of many ages ago? Let us hope that by working together with each individual and group making his or their contribution, we will develop the best possible program for the insurance of permanent agriculture.



Whistlers Wow Harrisburg

DAUPHIN COUNTY—Early in April interested persons in Harrisburg were treated to a rare visit by a flight of whistling swans which rested on the Susquehanna River over the weekend. Many persons called this officer regarding the birds—some inquiring whether the birds had been placed there by the Commission. On Friday, April 30, 1954, there were six more swans visiting on the river—possibly a few Johnny's come-lately who were reluctant to leave the southern climes.—District Game Protector Paul H. Glenny, Harrisburg.

Moving Day

YORK COUNTY—In early April two local sportsmen and I were looking over a proposed refuge site. We observed a woodchuck run across the road with something in his mouth which was alive. Hearing reports that chucks sometimes kill young rabbits, we tried to induce the chuck to drop what he was carrying, but it returned to the den. The squeal did not sound like a rabbit and it appeared the woodchuck was moving his family across the road to another den.—District Game Protector Daniel H. Fackler, Windsor.



Dig that TV Drummer

CAMBRIA COUNTY—Returning to headquarters on the afternoon of April 21, 1954, I observed a rather unusual and amusing incident. As I stepped from my car, I heard a rather odd sound which I finally located as coming from my TV antenna where a flicker was busy trying to drill a hole in the aluminum cross bar. The mast is bolted to the side of the dormer window in my bedroom. This drilling continued for the remainder of the afternoon at frequent intervals and everyone got quite a kick out of it. While it may have been amusing at 4 or 5 p. m. when the same activity was going on for the next three mornings at 5:30 to 6:00 a. m., the unusual part was still there, but the amusing part was gone.—District Game Protector J. L. DeLong, Ebensburg.

Big Brother Act Fails

FAYETTE COUNTY—During April, John Rush, Farmington cattle raiser, related the following to me: He had a minnow trap set in one of his fish ponds and when he checked it a weasel was in it. The weasel was dead from drowning. Apparently the weasel went in to get some fish and could not get out. Perhaps this weasel was trying to be like his bigger brother, the mink.—District Game Protector J. R. Hiller, Uniontown.

Sneak Attack

FULTON COUNTY—I became absorbed watching red ants literally eating a garter snake alive, beside one of the large ant hills on State Game Lands #53. I was wondering how they attacked him in sufficient numbers to stop his flight, when they answered my question for me. A rein-



forced patrol had slipped up my pants leg. They must have had their watches synchronized for they set their hooks at the same time.—District Game Protector Carl E. Jarrett, McConnellsburg.

Stinky Strikes Again

CHESTER COUNTY—One evening while checking groundhog hunters near Marshallton, I approached one of a group of hunters who related the following experience. He stated that he shot a groundhog in a gully and when he was on his way down to pick up the groundhog he noticed a skunk walking towards him. He shot the skunk and four others which were following it. His rifle was empty and there was still one more skunk walking towards him. He picked up a brick from an old foundation and threw it at the sixth skunk. He hit him with the brick, but before it died it left something fly that one groundhog hunter will never forget. The hunter lived in Chester and his hunting companions refused to let him ride home with them. They did however volunteer to bring him his car so he could get home.—District Game Protector Peter J. Filkosky, West Chester.

Amateur Electrician

MONTGOMERY COUNTY—A cooperator on one of our Rabbit Farms related the following to me. One evening the lights had gone off in the house. Assuming it had been caused by a blown fuse, the man went to check the fuse box in the cellar. While checking with the flashlight, he felt something pulling at his hair. Shining the light upward he saw a raccoon sitting on top of the fuse box. The coon while climbing onto the box had pushed off the master switch, plunging the house into darkness.—District Game Protector Donald L. Croft, Hatboro.

Game Collector

ARMSTRONG COUNTY—This report was sent to me by Deputy Ruppersberger of R. D. 1, Freeport. On April 3, 1954, Dale Rowley and Robert Snyder of R. D. 1, Freeport, shot a great horned owl along Buffalo Creek near Slatelick. Investigations later found a nest with two fledglings in it. They counted the remains of 14 rabbits, one wood duck, one rat and an unknown number of ringnecks that had been killed and carried to the nest.—District Game Protector William H. Shaffer, Kittanning.



Snake in the Grass

BERKS COUNTY—While assisting the Food and Cover Corps in planting food plots on Propagating Area 26, we saw a hen pheasant jumping and tumbling in the grass. When she got about 50 feet from us, we investigated and found a four foot blacksnake which I believe was heading from her nest.—District Game Protector Harry H. Rickert, Kutztown.

Groundhog Braves Blessed Event

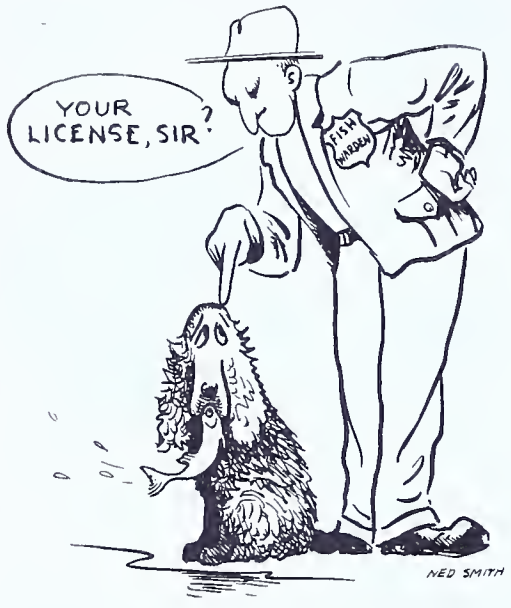
HUNTINGDON COUNTY—One day while on patrol with Deputy Webster, I noticed a groundhog hole near where we had stopped the jeep. A few moments later Webster called my attention to the fact that there were strange noises coming from the hole. I then went over and looked in the hole and there sat the woodchuck, brave as anything. The animal was making very loud grunting noises and would not even back up when I rubbed a stick up against its teeth. It made no attempt to bite the stick though. We thought maybe it was in trouble, so we started to dig her out when we saw where she was packing cow hair and soft down into one upper part of the hole making ready to have her young. So we left her alone satisfied that we had been thoroughly told how to "not disturb her in her family troubles."—District Game Protector Dean M. Lesnett, Huntingdon.





Persistent Bear Creates Circus Confusion

LUZERNE COUNTY—On April 10, I had some men working on State Game Lands #187. Around 1:30 p. m. I returned to the storage building to pick up a few tools and everything seemed to be in order. Upon returning that evening I found the corn crib door torn from its hasps and hinges and lying about fifteen feet away. The next day I had the men fix it, but for seven nights the same incident occurred. Finally getting tired of replacing the door every day, I contacted District Game Protector Lettie and informed him that some culprit was slowly wrecking our crib. That afternoon we took coffee and sandwiches with us and prepared for a long seige in waiting. About 7:30 p. m. that evening we heard the hasps and hinges rattle and looking out between cracks from an adjoining building we spied about a 300 pound bear pulling at the lock. The reason this incident seemed so peculiar is that at no time did this bear leave any scratches or marks indicating his presence. You'd swear this bear came from a circus.—District Game Protector Norman J. Forche, Conyngham.



World's Only Fishing Dog

SUSQUEHANNA COUNTY—There is a small stream running through W. R. Spencer's back yard in Thompson. Some years ago there was a ten inch trout living there which the Spencers were in the habit of feeding. They would hold bread or a worm in the water and the trout would eat from their fingers. If the fish was hiding they could call him to dinner by agitating the water with their hands. One day the family dog, a Spaniel, was drinking at the trout's customary feeding place when all of a sudden the dog jumped backward and with him came the ten inch trout. Fortunately, Mr. Spencer's father was at hand to return the fish to water. It is their opinion that because agitating water was the signal for meal time, the trout mistook the dog's lapping tongue for a choice morsel of food and had a bite. Of course, the startled dog reared back and thereby landed a ten inch trout and in so doing earned the distinction of being the world's only fishing dog.—District Game Protector Donald Day, Susquehanna.

Hen Turkey Heads Home

ELK COUNTY—I have been seeing a turkey hen in close proximity of my chicken yard. I thought of trying to chase it in order to prevent possibility of its getting disease from the chickens. However, I decided to find out why it persisted in staying so near the house and activity. It had a very good reason and still has—a nest with nine eggs at last check.—District Game Protector Vern A. Van Order, Wilcox.

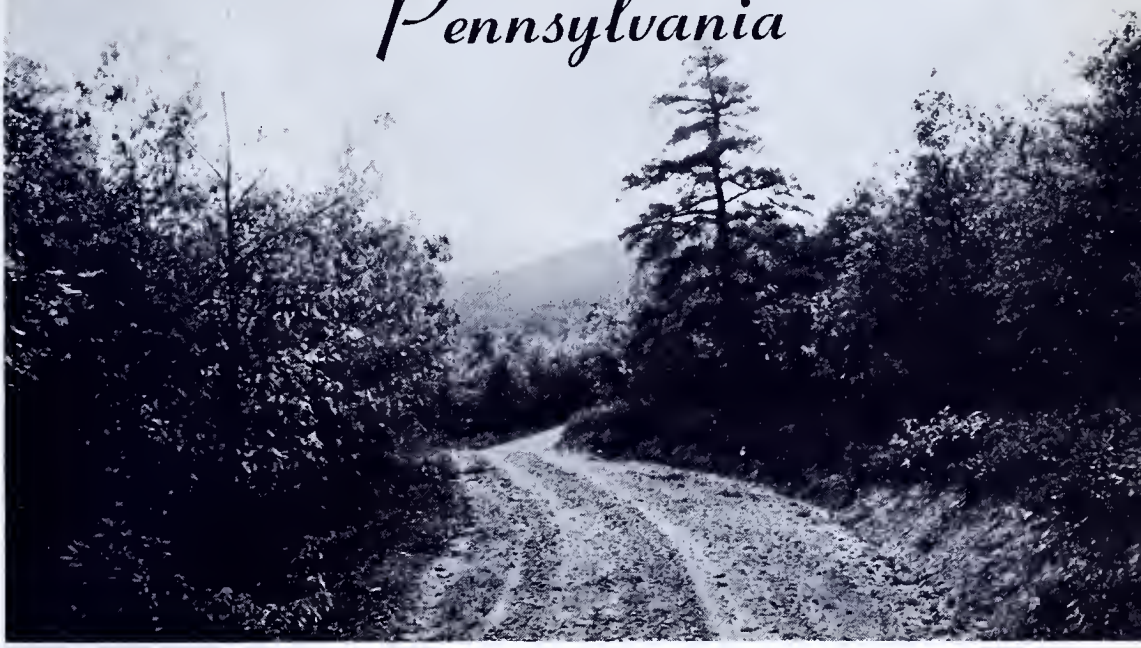
Early Birds

LANCASTER COUNTY—While on my way to patrol for Fish Warden Bielo on April 17, I was quite surprised to see a brood of young pheasants. I counted eight of the little fellows although there could have been a couple more. This is the earliest that I have ever seen young pheasants. They looked like they might have been a week old.—District Game Protector J. P. Eicholtz, Strasburg.

Sluiceway to Safety

WAYNE COUNTY—On April 22, 1954, I attended the meeting of the Wayne County Sportsman's Club. While there I gave a report on game stocked in my district. One of the men present, Paul Horst, told the members of the club about an incident which he has witnessed a number of times this spring. Mr. Horst has been feeding a number of ringneck pheasants near his home this past winter. One of the cock birds was killed on the highway. Since that time the remaining birds have been crossing the highway through a sluice pipe in front of Mr. Horst's home. The birds will fly to the bank of the road and then go through the sluice pipe single file. Since that section of the highway on U. S. Route 6 is being rebuilt, Mr. Horst hopes that they will not remove this sluice pipe in their rebuilding program.—District Game Protector Robert H. Myers, Honesdale.

Federal Aid in Wildlife Restoration—Northcentral Pennsylvania



The following article, fifth in a series of six, is the result of combined effort and teamwork. Field data and reports were compiled by Sam Kern, Land Utilization Assistant of the Northcentral Division. The article was prepared for publication by Division of Land Utilization personnel at Harrisburg. Photos by Commission photographers.

FEDERAL Aid in Wildlife Restoration was inaugurated as a program on July 1, 1938. Under this legislation, known as the Pittman-Robertson Act, Wildlife Research and Restoration Projects are approved in various states, and funds provided to finance seventy-five percent of the costs. (Expenditures for wildlife protection, general departmental administration, propagation and stocking of game are not allowable under terms of the Act.) Programs are financed from federal taxes imposed on sale of firearms and ammunition. Each state receives a proportionate amount of this fund each year, dependent upon number of licenses sold and the state acreage compared to the whole of United States.

From 1938 to 1947 receipts from these excise taxes were limited and projects were confined largely to purchase of hunting lands and research problems.

In 1948 the Pennsylvania Co-operative Farm Game Program was expanded under terms of a Pittman-Robertson project, approved to lease, establish and develop new areas. Since 1949 development of State Game Lands and other leased areas has also been partly financed with these federal funds. All activities receive prior approval and periodic inspection by personnel of the United States Fish and Wildlife Service.

This article is written to acquaint interested sportsmen and conservationists with the use of Federal Aid monies. It reports on accomplish-

ments in wildlife restoration throughout Northcentral Pennsylvania which includes Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga and Union Counties.

Within this Northcentral Field Administrative Division of the Pennsylvania Game Commission is 255,568 acres (slightly more than 28 percent) of the 902,179 acres of State Game Lands; 62,679 acres (over six percent) of the 1,048,145 total acres of Cooperative Farm Game Projects; and 23,171 acres (slightly less than twenty-one percent) of the 111,819 acres of other leased projects throughout the State. In addition, approximately 250,000 acres of Allegheny National Forest falls within this division and is managed for wildlife under terms of a Cooperative agreement.

Many State Game Lands were acquired with the help of Federal Aid funds. In the Northcentral Division acreage in various counties was purchased as follows:

County	*Acreage*
Cameron	164.5
Centre	15,971.7
Clearfield	2,200.0
Elk	424.1
Lycoming	2,339.1
Potter	1,319.7
Tioga	1,675.5
Union	295.7
Total	24,390.3

These areas were inspected and approved by representatives of the United States Fish and Wildlife Service.

Employes of this Northcentral Field Division of the Pennsylvania Game Commission have encountered many

(Continued on Page 35)

Bear abound in the mountains of Pennsylvania. Adults and young utilize development areas.



STATE GAME LANDS—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS

January 1, 1949 to December 31, 1953 NORTHCENTRAL DIVISION

County	Food Strips				Seedlings		Forest Cuttings			Fruit Trees	
								Border-Edge			
	Cleared Acres	Planted to Grains† Acres	Seeded to Clovers Acres	Maintained in Sod Acres	Evergreens No.	Others No.	Release Acres	Width* Ft.	Length Ft.	Released No.	Pruned No.
Cameron	64.0	281.0	39.0	56.0	4,000	3,400	25.0	33	9,360	716	657
Centre	85.0	551.0	336.0	359.0	51,750	34,005	31.0	40	58,100	30	302
Clearfield	1.0	75.0	50.0	29.0	15,000	1,083	351.0	38	32,900	1,635	1,254
Clinton	53.0	155.0	44.0	15.0	800	330	23.0	43	39,010	1,000	.....
Elk	184.0	348.0	214.0	122.0	30,000	74,500	307.0	25	17,280	1,006	1,226
Lycoming	71.0	335.0	66.0	164.0	500	37,225	123.0	50	11,200	310	499
McKean	66.0	165.0	43.0	23.0	6,000	6,100	33.0	40	5,520	2,192	1,359
Potter	155.0	312.0	49.0	380.0	9,200	36,500	43.0	40	4,000	452	793
Tioga	136.0	510.0	229.0	597.0	16,900	34,415	13.0	35	9,075	40	479
Union	107.0	85.0	38.0	22.0	29,500	54,200	20.0	18	4,600	400	240
Totals	922.0	2,817.0†	1,108.0	1,767.0	163,650	281,758	969.0	36*	191,045	7,781	6,809

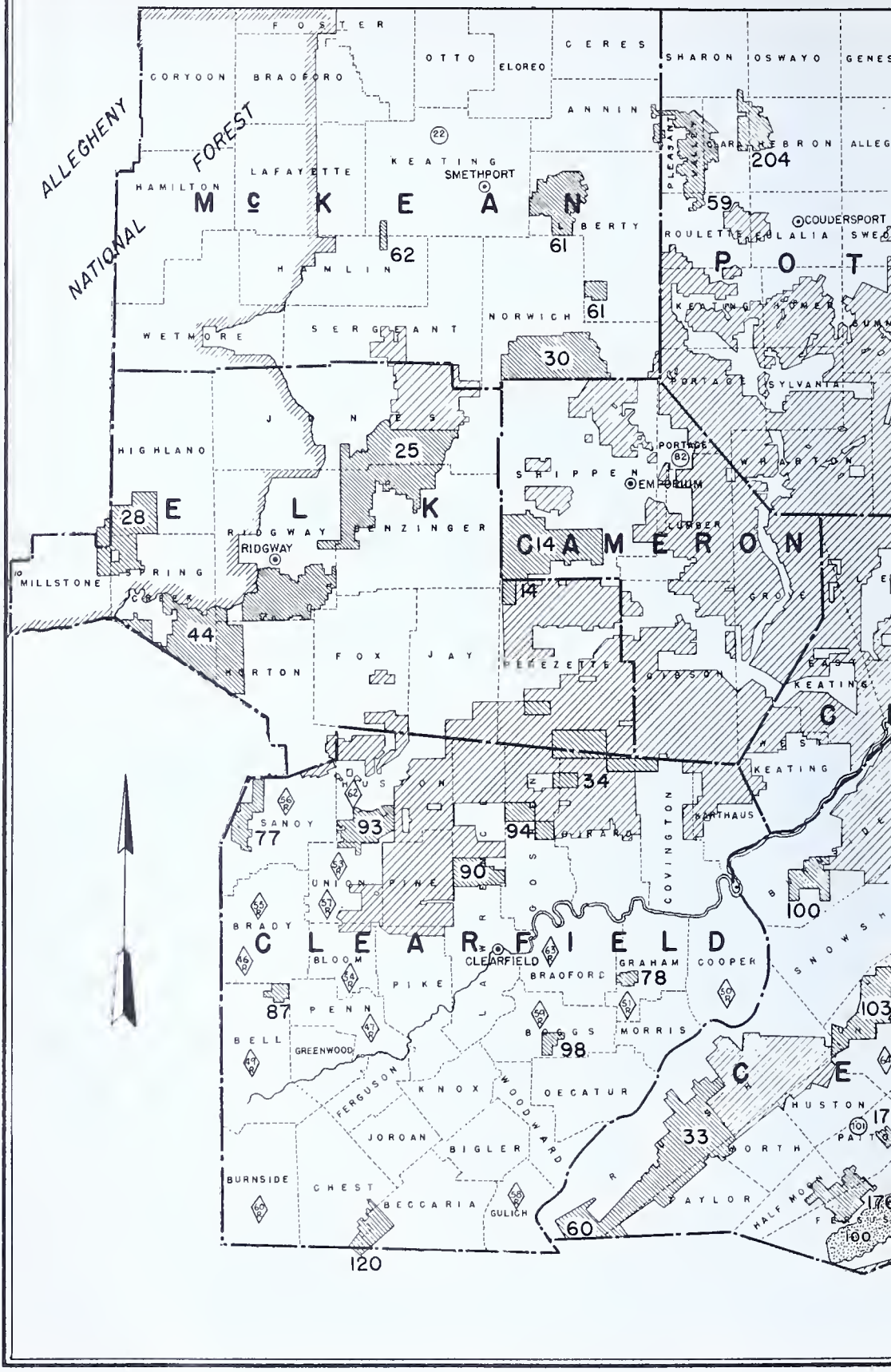
MISCELLANEOUS

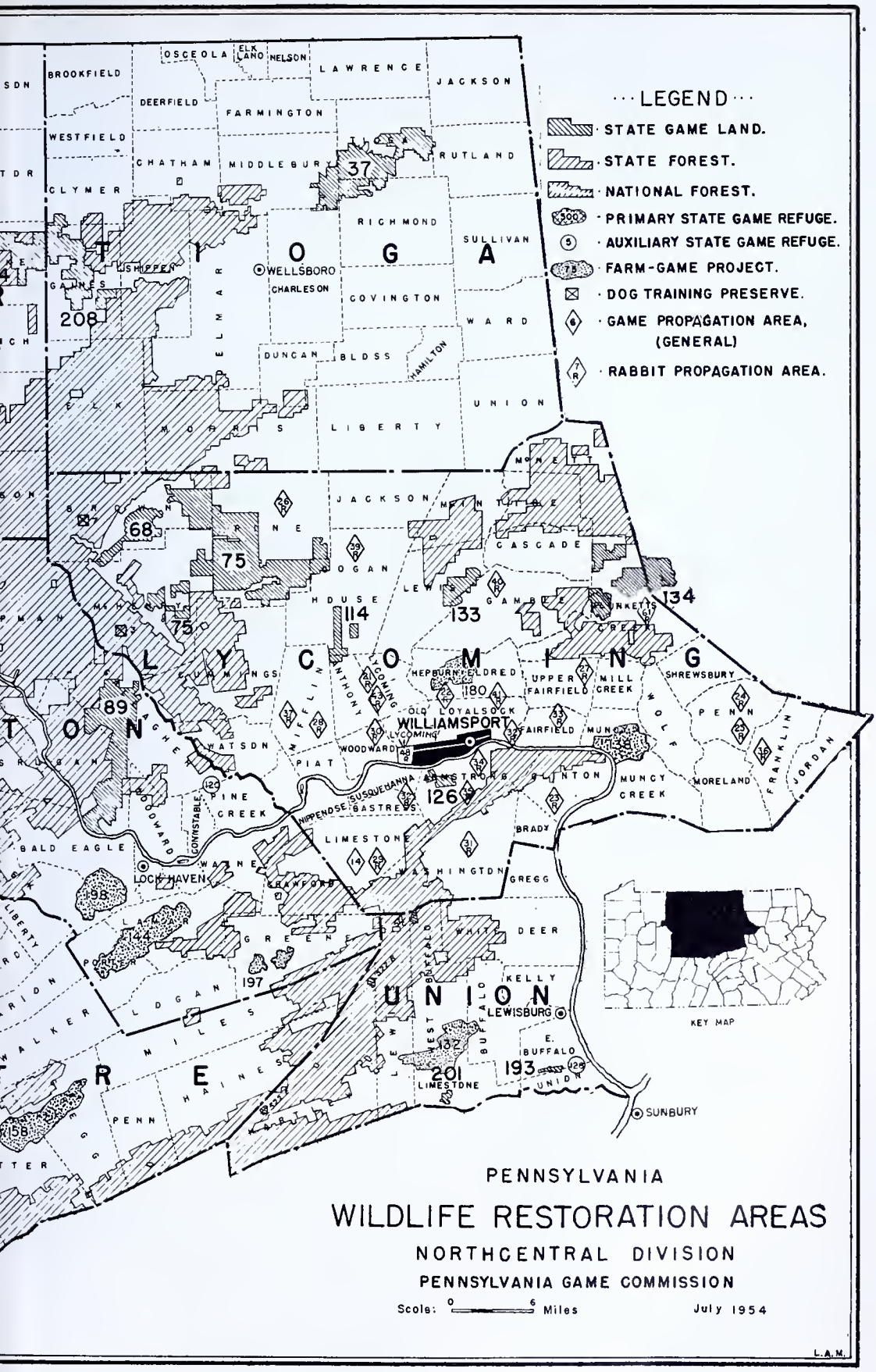
Centre ....180 pounds Shrub Seed sown in Nursery Beds—S.G.L. No. 176.
Clearfield ..2 bushels Watercress planted. 58 Apple Trees grafted.
Elk .....1000 pounds Millet planted for Waterfowl. 19 bushels Watercress planted.
Lycoming ..10 pounds of Shrubs planted in Nursery Beds.
McKean ...10 Apple Trees grafted.
Tioga .....25 pounds Shrub Seed planted. 65 Apple Trees grafted.

* Average.

† Surplus grains were harvested and distributed for use by Wildlife.

Note:—Shrub Seedlings raised in Nurseries on State Game Lands were utilized in the planting program.


ALLEGHENY NATIONAL FOREST
FOSTER
CERES
OTTO
ELDRED
CORYDON
BRADFORD
ANNIN
SHARON
OSWAYO
GENESEE
KEATING
SMETHPORT
HAMILTON
LAFAYETTE
M c K E A N
LIBERTY
HAMLIN
NORWICH
SERGEANT
WETMORE
JONES
HIGHLAND
ELK
RIDGWAY
BENZINGER
SPRING
MILLSTONE
HORTON
FOX
JAY
PERKINS
GIBSON
CAMERON
LUMBER
GROVE
POTTER
COUDERSPORT
ROULETTE
EULALIA
SWEDE
KEATING
SUMMER
PORTAGE
SYLVANIA
PORTER
WHARTON
STIPPEN
EMPORIUM
SANOY
UNION
PINE
BRADY
CLEARFIELD
BLOOM
BRADFORD
GRAHAM
COOPER
COVINGTON
BELL
PENN
GREENWOOD
BIGGS
MORRIS
KNOX
OECATUR
FERGUSON
WOODWARD
JORDAN
BIGLER
HUSTON
BURNSIDE
CHEST
BECCARIA
GULICH
TAYLOR
HALF MOON
22
62
61
59
204
30
25
28
14
44
34
93
94
77
90
100
87
78
98
103
33
60
120


··· LEGEND ···
STATE GAME LAND.
STATE FOREST.
NATIONAL FOREST.
PRIMARY STATE GAME REFUGE.
AUXILIARY STATE GAME REFUGE.
FARM-GAME PROJECT.
DOG TRAINING PRESERVE.
GAME PROPAGATION AREA, (GENERAL)
RABBIT PROPAGATION AREA.
TIOGA
LYCOMING
CLINTON
UNION
SNYDER
MONTOUR
WILLIAMSPORT
WELLSBORO
LEWISBURG
SUNBURY
LOCK HAVEN
KEY MAP
PENNSYLVANIA
WILDLIFE RESTORATION AREAS
NORTHCENTRAL DIVISION
PENNSYLVANIA GAME COMMISSION
Scale: 0 6 Miles
July 1954
L.A.M.

COOPERATIVE FARM-GAME PROJECT PROGRAM—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
January 1, 1948 to December 31, 1953 NORTHCENTRAL DIVISION

County	Leased		Safety Zones Established Dismantled	Refuges Established Maintained	Food Strips and Nesting Cover		Seedlings Planted			Wildlife Borders Developed Lin.Ft.Cut
	Farms	Acres			Strips	Acres	Coniferous	Multiflora Rose	Other Species	
Centre	150	20,990	591	25	5	4	125,900	27,900	4,750	2,900
Clinton	138	18,329	712	11	2	4	46,650	6,400	3,000	2,800
Lycoming	46	5,450	281	10	20	17	23,000	3,300	500	1,500
Union	135	17,910	655	3	1	1	6,950	19,000	4,150	4,500
Totals	469	62,679	2,239†	49*	28	26	202,500	56,600	12,400	12,700

* All Refuges are maintained the entire year.
† All Safety Zones are erected prior to the beginning and dismantled after close of the Hunting Season.

OTHER LEASED AREAS—(Propagation Areas—Rabbit Farms, etc.)—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS
January 1, 1949 to December 31, 1953 NORTHCENTRAL DIVISION

County	Food Strips						Seedlings		Forest Cuttings			Fruit Trees	
	Planted to		Seeded to	Maintained	Plots					Border-Edge			
	Cleared Acres	Grains Acres	Clovers Acres	in Sod Acres	Purchased No.	Acres	Evergreens No.	Others No.	Release Acres	Width* Ft.	Length Ft.	Released No.	Pruned No.
Cameron	....	24.0	....	....	2	4.3	....	....	....	....	....	....	....
Centre	....	....	....	....	1	1.0	....	....	....	....	....	....	....
Clearfield	....	2.5	2.5	....	12	13.3	12,500	2,076	....	13	355	103	103
Clinton	....	16.0	....	....	....	....	....	....	....	....	....	....	....
Elk	....	9.4	9.0	10.0	8	16.3	....	99	122.8	....	....	2,718	2,425
Lycoming	....	....	20.0	....	28	13.4	11,800	6,500	27.0	22	13,450	22	261
McKean	....	35.0	2.0	....	....	....	....	10,350	....	....	....	2,336	2,288
Potter	....	....	....	....	15	22.5	....	....	....	....	....	....	....
Tioga	....	....	....	....	2	3.5	....	....	....	....	....	....	....
Union	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	....	86.9	33.5	10.0	68	74.3	24,300	19,025	149.8	18*	13,805	5,179	5,077

MISCELLANEOUS
Clearfield .....Constructed 37 large brush piles.
Elk .....20 acres of aquatic foods were planted†
McKean .....10 spring seep areas developed for wildlife.

* Average. † Acquatic foods planted included Wild Rice, Sago Pondweed, Duckmeal, Coontail and Arrow-Arrum.

Note:—Twenty-four bushels of Watercress was planted in spring areas in Elk County and four dusting areas prepared in the Wild Turkey Range.

Work on the Allegheny National Forest is included in the above totals.



Flocks of wild turkeys utilize forest openings, feeding upon planted grains, clovers and insects.

problems in conducting their wildlife restoration program, primarily the result of an unbalanced sex ratio in the deer herd, and excess numbers of these white-tails for the available food supply. Sprouts and reproductive shrub growth, produced by forest cuttings, are overbrowsed and killed by these animals. Planted evergreens and shrubs are often eaten before they can produce food and cover for small game species. Farm crops planted in food strips are usually eaten by deer before the grain matures. These factors make small game management a rather difficult undertaking. Regardless of the problems involved, habitat for upland game and migratory species in Northcentral Pennsylvania has been improved with funds provided under the Pittman-Robertson Act.

Although a proportionate amount of wildlife restoration work in this portion of the Commonwealth has been done on the Allegheny National Forest and various areas leased by the Pennsylvania Game Commission, the greatest accomplishments have been on State Game Lands which are areas purchased with funds provided through sale of hunting licenses. The reason for this is obvious since over one-fourth of these lands are located in the Northcentral area.

A very few acres of State Game Lands in the division are fields, the remainder are forested and have been managed primarily for deer, bear, wild turkey, varying hare and ruffed grouse. The program on these lands which was partially financed by Federal Aid funds, included clearing and removal of timber to provide openings for food strips, planting annual grains and then seeding the plots to perennial grasses and clovers; annual mowing of grasses and clovers to improve succulent foods; felling large trees along edges of openings and

fields to stimulate edge growth of berry producing shrubs and vines; planting evergreen trees, shrubs and vines to improve food and cover for wildlife; thinning or removing second growth timber to create additional low growth for game cover and provide deer browse; removing overshadowing timber around wild apple trees and annual pruning to increase fruiting capacity; creating small ponds or marsh areas and planting aquatic plants to obtain full utilization by wild waterfowl and other wildlife species. Lands on which these practices were applied are located in practically all counties. Many sportsmen have observed and are familiar with this management work, having accompanied Game Commission employes to project areas.

Development activities similar to those applied on State Game Lands have been conducted on the Allegheny National Forest in Elk and McKean Counties. Wildlife development on these lands is a responsibility of the Pennsylvania Game Commission, coordinating its work with the United States Forest Service. Although many acres of food strips were planted and maintained since the program became effective in 1949, emphasis was placed on releasing game food producing trees, shrubs and vines by felling overshadowing tree growth. A total of 111 acres in Elk County and 26 acres in McKean County was improved by these release cuttings, benefiting wildlife on hundreds of surrounding areas. In addition, thousands of wild apple trees were released from competitive growth and pruned to increase the amount of fruit available for use by wildlife.

Elk County was selected for the initial marsh or small dam development program, whereby dams will be constructed to flood marshes on State Game Lands and the Allegheny National Forest. Project personnel have surveyed five promising sites and prepared plans necessary to obtain approval for construction of small dams at these locations. The structures will impound and make available many additional acres of water to attract migratory waterfowl. The program of planting aquatic plants, now conducted on nearby ponds, will be expanded to include these sites.

State Game Lands #25, near Johnsonburg in Elk County, is well known for the forest—wildlife development program initiated in 1947. For over five years personnel employed under a Federal Aid Development Project removed sawlogs and pulpwood from the area. Beech, birch, maple and cherry timber was selectively cut and removed following accepted forestry practices, the plan being to correlate Forestry and Wildlife Management. Resulting sprout growth and reproduction on over 800 acres treated in this manner, indicates that forest game may be managed through proper harvesting of timber stands. Wildlife habitat was considerably improved by these forest operations.

A planting program has also been conducted on private farm areas located within the heavily wooded portion of the Northcentral Division. Approved by the Commission on an experimental basis and limited to portions of Cameron, Clinton and McKean Counties, the program involves leasing fields adjacent to forest and game land areas, and planting two to four acre strips each year to grains and permanent grass-clover mixtures. By utilizing these existing fields the normal cost of clearing plots on nearby State Game Lands is eliminated. Under terms of these agreements twenty-four acres were planted in Cameron County, sixteen acres in Clinton County and sixteen acres in McKean County. It is too early to judge the merits of this phase of the project, but personnel have noted considerable utilization by all forest game species, particularly deer and wild turkey.



Forest cuttings provide browse for deer, the most common big game animal found in northcentral Pennsylvania.

As many readers know, the wild turkey range now extends throughout the Northcentral portion of Pennsylvania. Large numbers of this favorite game bird are killed each year. At least a small percentage of the increase in wild turkey may be credited to the creation of openings and planting of food strips in heavily wooded areas throughout the division. Food in the form of grains and insect life are important in their diet. Commission employes and sportsmen alike are pleased with the increased number of wild turkey flocks and the hunting they provide.

With the Northcentral portion of Pennsylvania primarily forested, development for farm game species is limited. Nevertheless, wildlife habitat has been greatly improved on rabbit farms in Clearfield and Lycoming Counties with the aid of Pittman-Robertson funds. Practices applied on these private farms included the planting and annual mowing of clover strips near low brushy cover, cutting large trees along field edges to stimulate and help establish low shrub growth, constructing large brush piles along woodland borders to provide rabbit retreats, releasing wild apple trees along forest edges by removing trees that shade them and the pruning of these fruit trees to increase production of fleshy foods. In addition, thousands of evergreen tree seedlings were planted on steep field slopes and odd corners to provide protective cover for all wildlife. The same practices were applied and found to be beneficial on Propagation Areas and other leased lands.

The Cooperative Farm Game Project Program was expanded into the Northcentral Division in 1947. Eight projects are now located in the four less densely forested counties of this



Development of natural marsh areas by construction of small ponds will attract waterfowl and improve a sport that is becoming increasingly popular.

division. While the projects are not numerous, several contain over ten thousand acres. These were established in the long narrow agricultural valleys found in this region.

Many of the restoration practices accomplished through the use of Pittman-Robertson funds are of a permanent nature. Planting farm crops on contour strips, establishing multiflora rose hedges, planting evergreen and food bearing seedlings, constructing farm ponds, draining wet fields to provide nesting sites, purchasing and planting food and nesting strips and cutting and planting woodlot borders have all materially aided in the wildlife development program. Cooperators were given 14,200 pounds of rye grass seed for planting in the last cultivation of corn. A total of 301 pints of crow repellent were distributed to cooperators in an effort to reduce corn seed damage by birds and rodents. Technical assistance and advice were rendered to cooperators in establishing the numerous conservation practices on the land.

While more than four hundred and sixty farms were added to the Cooperative Farm Game Program during the six years of operation with Pittman-Robertson funds in this one division, the statewide program now consists of 10,383 farms containing 1,048,145 acres.

The Cooperative Farm Game Project Program has proven so popular with landowners of the counties within the Northcentral Division that there is a great backlog of requests for participation. Game Commission policy does not permit further major expansion at this time. Most of the available funds are being used to develop sound wildlife conservation practices on farms now in the program.

Accompanying tables outline accomplishments on lands owned and leased in Northcentral Pennsylvania by the Game Commission. These restoration activities were partly financed with funds supplied under the Pittman-Robertson Act. The map designates locations of these project areas. Food and cover for wildlife were improved by the many practices previously mentioned.

This is the fifth of a series of articles on each of the Commission Field Division. These special reports to Pennsylvania Sportsmen and conservationists tell how Pittman-Robertson money has been and is being spent in an effort to maintain and improve wildlife conditions. It is hoped that these will encourage you, as a sportsman, to personally visit and inspect this important management work.

A Brief History of the Indian Hunter

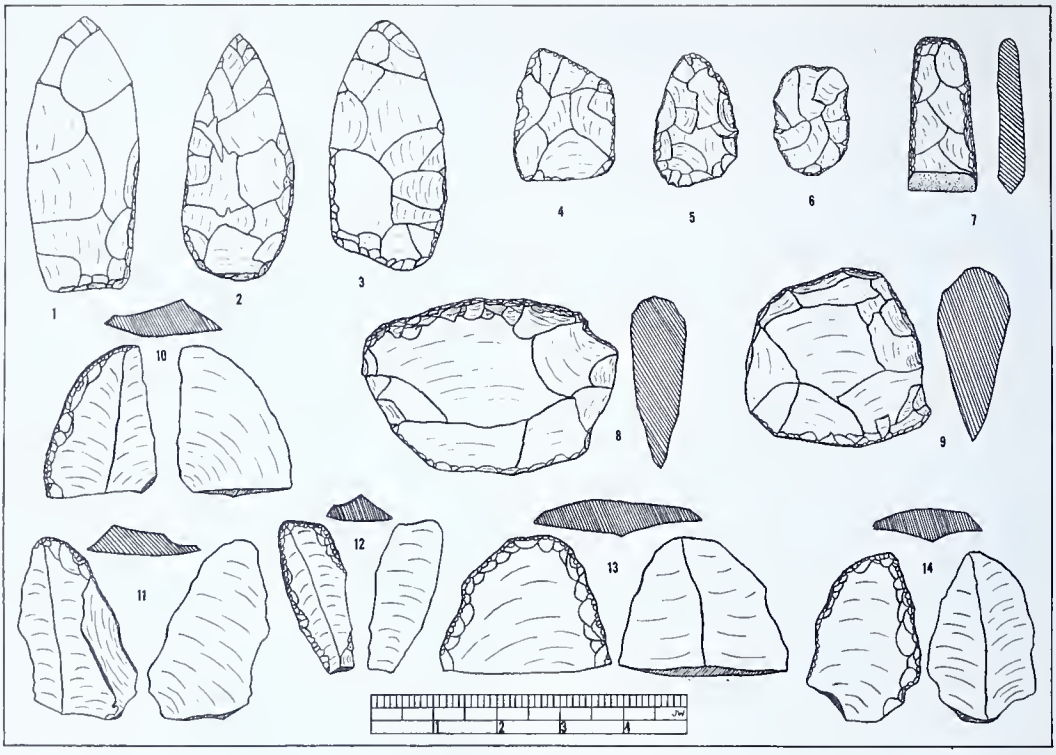
PART II
ARCHAIC MAN

By John Witthoft



Spearthrowers, characteristic weapon of Archaic Indians, is still in use today among the Eskimo and Australia aborigines. The drawing illustrates the method used in throwing the light spear.

MAN of the Archaic Epoch hunted the animals which still exist, and he apparently could not make ends meet or keep his belly full by the game he took with his spear. Thus the earliest Archaic cultures which have been found in New York and in the West represent people who often lived on plant foods, especially porridge made from acorn-flour and meal from other seeds. The great changes in American life which characterized the Archaic Epoch were: greater dependence on foods which did not come from hunting, especially plant foods; abundance of stone grinding tools which were used to make flour from seeds; the everyday manufacture of tools from non-flinty stones by battering and grinding techniques (which did not replace flint-chipping, but were used along with it); the ordinary use of stone axes and other chopping tools of several types. All of these details of life were innovations, and were things which seem to have been completely unknown to the Paleo-Indian peoples. Each item on this list represents an invention or a series of inventions, a gain by mankind in efforts to make a better and more secure living from the world about. All of these new methods in making a living may have been invented in the old world and carried here by new immigrants; they may have originated here, but they were also invented at nearly the same time in several parts of Europe and Asia. Regardless of their origin, they are good examples of the ancient roles of invention and innovation in improvement of the lot of man. In later Archaic times,



These tools come from the DeTurk Site at Neversink Station, Berks County. All were chipped from Quartzite which the Indians obtained from the mountain slopes at Sally-anne Furnace, Newmanstown, and from the Welsh Mountains in Lancaster County. No. 1-3 are spearpoints, the bases of which were dulled by chipping a blunt edge which would not cut the cords lashing the point to a spearshaft. No. 4-6 are knives with edges worn by cutting and skinning. No. 7 is an adze blade, one of the two oldest ground stone tools found in Pennsylvania. No. 8-9 are choppers, probably used in butchering game. No. 10-14 are scrapers.

American men made other important advances, which included effective fishing methods, the use of river clams and ocean shell-fish as food, trapping devices, and a special type of hunting tool, the spear-thrower, which I shall discuss later.

We now recognize two periods within the Archaic Epoch, the Early and Lake Archaic Periods. It is very likely that these should be divided up into a great many separate times, since we know relatively little of these remote ages and are only beginning to glimpse the great variety of culture types and tool forms which were the product of Archaic man. In early Archaic times, the hunting tools which survive are heavy spearpoints which were chipped from many different stones, some of them flints and most of them coarse materials, even river pebbles. They are always crudely formed, as compared to earlier and later tools, and they usually have a tang for lashing to the shaft. The distinctive thing about the Early Archaic spearpoint is the lack of any notching for the lashings; these spears have straight or tapered stems.

The other ordinary tool of Early Archaic man was the chopper, a sort of cleaver or heavy knife about as large as a man's hand, probably used in butchering game. Choppers are usually very crude, and were, ordinarily, crudely chipped from coarse-textured stones rather than from flint. They were the ancestors of all later stone axes. Scrapers or beveled tools

are not common in most sites of this age, and they are most notable for their crude workmanship. Sites of this period are as yet poorly known, and are all believed to be more than six thousand years old. Early Archaic tools are remarkably clumsy and poorly made as compared to the earlier implements of Paleo-Indian times. These people had made one important advance in stone technology, however; they shaped hatchet blades from hard shale and granite by battering away the surface of the rock with a cobblestone until it was of the desired form, and then smoothed the surface and sharpened the edge by grinding on a whetstone. The earliest of these hatchet-blades were probably improved types of the rough choppers, and they were probably most useful in dismembering game. The earliest grinding stones and pestles, apparently used in making flour from acorns and other seeds, also appear at this time.

The Late Archaic Indians

The Late Archaic Period is believed to have begun slightly more than five thousand years ago and to have lasted until about three thousand years ago. Earlier than this, people were not numerous in North America, and the relics of their existance are not abundant, but the Late Archaic peoples seem to have been the first really successful and populous citizens of our area. Spearpoints of this period are more numerous than all other kinds put together, and one is apt to be found on any field or in any garden in the state. The vast majority of the campsites from which we collect Indian relics are of this age. The tools of this period are greatly varied, and most of the ordinary types of relics which are familiar to us are really the particular tool types of these times. The spearpoints range from very small to very large, but they all are characterized by a tang of some form or other which has crude, broad notches or constrictions to receive the lashings which fastened the flint tip to the spear-shaft. The majority of them were not used on lances (stabbing spears) but rather on javelins which were flung with the aid of a special hunting tool, the spear-thrower, which is described later. The ordinary tomahawk of our collections, the axe with a groove to hold the handle, was the common woodsman's axe of this period, and was apparently not used in earlier or later times. Most of the stone pestles, the so-called "corn grinders," belong in this period, and were used for crushing acorns, not corn, into flour.

The man of Late Archaic times used every food resource which he could find, and was a hunter, trapper, fisherman, and collector of wild plant foods. In western Pennsylvania he sometimes dug river clams, but he apparently did not use shellfish in more easterly areas. His burials and the skeletons of his dogs have been found and studied in large numbers; I have already described his bones as identical with later Indians, and his dog deserves more complete discussion in a somewhat later section of this paper. I do not want to describe all of his tools in detail, but should mention the most important of the hunter's implements and indicate how they were used.

An Archaic Hunting Tool—The Spearthrower

In Archaic times, our Indians had not yet learned to use the bow, and the lance or stabbing spear was no longer the usual hunting tool as it had been in Paleo-Indian times. Instead, the Archaic hunter killed his game with a light javelin, which was propelled by a lever-like tool, the spearthrower. This tool is somewhat difficult to explain, because we use nothing that in any way resembles it, and its mechanical principles are not familiar to the ordinary person. Nevertheless, it was at one time an

important and ordinary implement for hurling spears, used by many peoples of the world. It was the weapon which Aztec warriors used against Spanish soldiers during the conquest of Mexico. The spear-thrower may still be seen in use today among Eskimo and among the aborigines of central Australia.

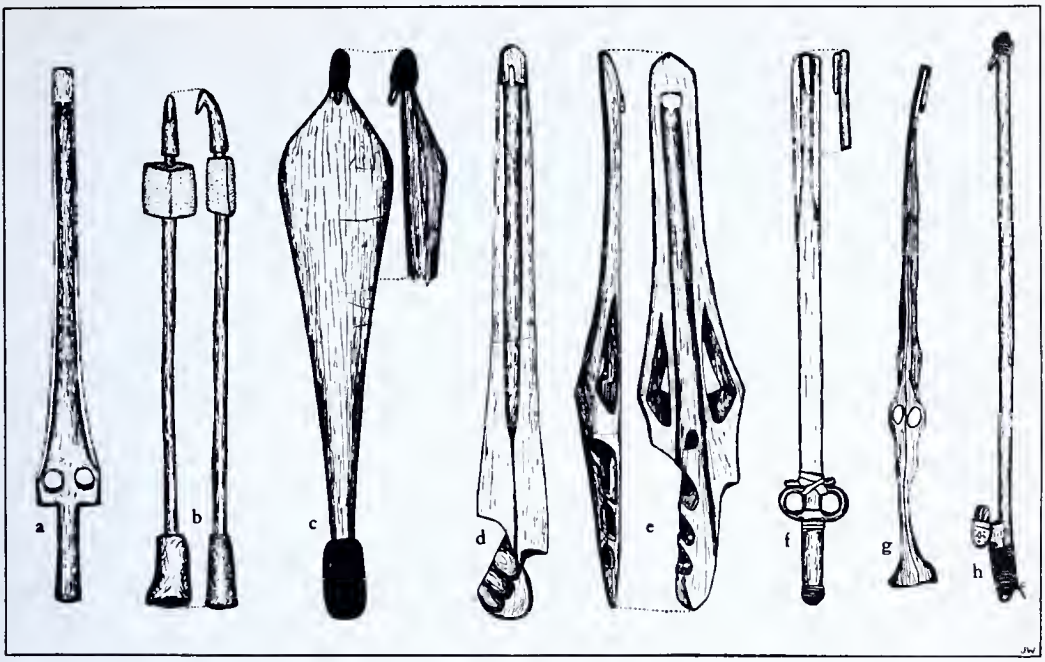
The spearthrower is a short bar of wood, about two feet long, with a handle at one end and a hook at the other. The hook fits into a socket at the back end of the spear shaft, and the spear is thrown by slinging it from this hook. The spearthrower has several consequences in throwing spears: it lengthens the arm by about two feet, vastly increasing the length of the arc and the velocity by which the spear is thrown; it magnifies the turn of the wrist in throwing a spear; it permits all the thrust to be delivered to the butt of the spear, rather than to the middle of the shaft (as in hand-throwing), so that less force is lost; it permits adding weights to the hook-end of the spearthrower, so that this lever can be swung with great momentum, somewhat like a golf club. Modern primitives who use the spearthrower, Eskimo and Australian, handle the tool with great accuracy and skill, and are able to hurl a spear with tremendous force by this device, enough to drive a spear quite through a kangaroo or bury a harpoon deeply in a seal.

Archaic spearthrowers of the eastern United States are known only from harder parts of the tools which have survived, and the wooden shafts have long since rotted away. However, these hard parts, stone weights and antler handles and hooks, have been found together in graves many times, with their holes lined up as they were set on a wooden rod. A great variety of stone weights for spearthrowers are found; the commonest, called a "bannerstone," resembles a double-bitted steel axe, with a drilled shaft hole. Bannerstones were used only during the Late Archaic Period, and other types of weights, especially those called "birdstones," were used in somewhat later times. The bow did not appear in this country until a much later date, probably not more than two thousand years ago.

The Indian Dog

Indian dogs of the Archaic Epoch were exactly like those kept by Indians in historic times and seen and described by our ancestors: these breeds are now, however, completely extinct. They were small wolf-like animals, ranging in size from that of a beagle to that of a fox. They did not bark like our dogs, but howled in wolf fashion. Our forefathers thought they were merely a domesticated fox or coyote, but the bones of these dogs prove that they did not originate from any American fox or wolf but were a true dog of primitive type which had originated in Asia. They were most closely related to the wolves of Asia, and the skeletons almost never show any evidence of cross-breeding with American foxes. The Indian dog closely resembled the Dingo of Australia or the primitive dog of the Andaman Islands of southern Asia, and was brought here more than five thousand years ago. Neither was it at all closely related to the Eskimo husky or malemute, or to the Siberian dog of the Alaskan Eskimo; these are much more advanced and specialized breeds. Unlike the Indian dog, the Eskimo dogs do frequently breed with wolves, and are much more courageous, aggressive, and useful dogs than were the Indian breeds. The Indian dog was a half-wild scavenger who was completely dependent upon humans for food and survival.

Indian dogs were kept in large numbers during Archaic times, and do not seem to have been so numerous in later times. However, at the time of the first white explorations,



Spearthrowers from various times and places. "A" is a Tarascan spearthrower from Mexico; "B" is a reconstruction of a Late Archaic specimen of the eastern United States; "C" is a paddle-shaped wooden thrower from Australia; "D" is a northern Alaskan Eskimo specimen; "E" is an Eskimo thrower, more than 500 years old; "F" is from Arizona; "G" is from Florida; "H" is from coastal Peru.

the Huron of Ontario kept huge numbers of dogs; these people formed such a dense population that they had nearly exterminated the deer and other game of their area, and the dog was their major source of meat. As far as we know from early accounts and from the archeology, the Indian dog was kept for only a few purposes. Most important, dogs were eaten, and this was probably their main value. They were also kept as scavengers, to clean up garbage and excrement about the camp. They were of some value as watchdogs, to set up a howl when prowlers appeared. They were apparently of almost no value in hunting; they lacked the bred-in abilities of a good field dog, and they were kept by people who had never developed methods for hunting with dogs. They were not fed meat from the chase, but lived on garbage, mice and such small critters, and fish. At times they seem to have fed entirely on fish, and, in excavating Indian sites, we frequently find dog manure preserved; it is made up almost entirely of partly-digested fish bones. We believe that dogs were not kept as pets, but as scavengers, as an extra source of meat, and as a food reserve to be eaten in famine times.

The Transition Between Archaic and Woodland Times

About three thousand years ago, drastic changes in Indian ways of life occurred in all parts of the East. During this Transitional Period in Pennsylvania, Indians lived mostly upon the rivers, apparently taking up an intensive canoe-life. They made very distinctive tools which can scarcely be mistaken for those of any other age. Flint spearpoints are of several broad-bladed forms, and only a few other forms of flint knives and scrapers were used. These are the earliest sites in which large numbers of notched-pebble net sinkers are found, suggesting the first general use of fishing nets. Almost none of the stone tool shapes of earlier times were

still in use. Grooved axes were no longer made, but flat adze blades of granite were apparently used in making dug-out canoes. For the first time in America, cooking vessels were in use. These were not made of pottery, but were carved from blocks of soapstone; broken pieces of the soapstone kettles are found in abundance on larger sites of the Transitional Period. The kettles were rectangular, box-like vessels with flat bottoms and a lug or handle at each end. Pieces from broken kettles were cut into beads and were made into weights for the spearthrower. These weights are rectangular slabs of stone with two or four holes drilled through them, or four notches sawed into the edges, and were lashed to a flat wooden spearthrower, instead of having a shaft hole for a round rod as did the earlier bannerstone. The sites of this age are almost always on the shore of a large stream, and are usually littered with flint chips which are thinner and larger than those of any other times, with net-sinkers made by knocking notches into the ends of a pebble, and often with broken pieces of soapstone kettles. Canoe-anchors (large notched boulders) and boulders with cup-shaped holes worked all over their surfaces are also found on these sites. The soapstone was quarried from an outcrop near Christiana, Lancaster County, and most of the flint used in the Susquehanna Valley during this period came from Caledonia, Franklin County.

Farmers of the Woodland Epoch

During the Transitional Period, our Indians apparently gave up Archaic hunting patterns, in which men cruised the hills and countryside on foot, and they began to follow the rivers for fish, migratory wildfowl, and river-front game. In all later times they continued to inhabit the river valleys, rarely settling away from main streams and making only hunting-trips into the back-country. Men of Transitional times depended upon their canoes to carry cumbersome household goods, kettles, nets, and flint supplies over vast distances. Men of Archaic and Paleo-Indian times could not carry such bulky paraphernalia, and traveled with only axe, clothing, and hunting tools. None of these peoples seem to have ever built houses or tarried long in one place. Almost three thousand years ago, however, farming began, and even in its first stages agriculture seems to have completely modified Indian life. It made sedentary life possible, it led to house-building and town-growth, and made possible much larger populations by lessening the frequency and intensity of starvation. We know very little yet of the early stages of agriculture in the East, but have enough information to outline the growing importance of farming, the introduction of new and improved crop plants, and the constantly increasing effects of farming on everyday life.

Indian agriculture was axe and hoe farming. Mature, full-grown hardwood forest, especially walnut and hickory on the river flats, was cleared with the axe, and yielded fertile, weed-free fields. All cultivation was by scraping with the hoe, and crops were planted in hills as we sometimes plant corn, not broadcast or rowed. Houses and storage structures were built adjacent to the fields, and gardens became the focus of settlement, the place where the hunter lived even though he might travel more than a hundred miles a week in pursuit of game. Farming was entirely the affair of women, probably because women had first discovered and developed crop plants, and field-grown foods quickly became the staples and dietary main-stays of the community.

. . . To Be Continued



Wildlife Grows on Good Soil

THERE'S a man out in Ohio who spends a large part of his time lecturing on conservation. He uses a lot of tricks to attract and hold the attention of his audiences and one of the best is this: He holds up a twenty dollar bill, and offers it to anyone who can name something that a person uses everyday that did not come from soil or that was manufactured without the use of water. He's been using that trick for more than ten years. He still has his twenty dollar bill.

Next he asks his audience to name some item of food that does not come directly or indirectly from the soil or water. Before he finishes, everyone has to admit that soil and water are very important. From soil come plants that provide us with vegetables, bread, cereal and other foods. From soil we get cotton and other fibers for clothing. Trees grow in soil, and we all know how important they are. Grasses and forage plants that feed the animals from which we get milk, meat and leather also grow in the soil.

In the same way that we are dependent upon soil and the plant life it supports, so are wild animals. Try making a list of the animals that are fun to hunt, that eat plant life. You'll find that rabbits, squirrels, deer, pheasants and quail eat plants or plant products. One of our most valuable fur-bearers, the beaver, is a vegetarian, and another, the muskrat lives mainly on plants. Other animals depend for food on animals that eat plant life. Mink, foxes, skunks and bobcats eat smaller animals that live on plants. Even trout, bass, walleyes and pike are dependent indirectly on plants for the base of their food chain.

Animals need plants too for shelter or nesting. Rabbits hide or make their homes in a cat brier tangle or

A beaver house shows the amount of vegetation required to support this valuable furbearer.

Hal Harrison Photo



other brushy spot. Squirrels nest high in an oak or hickory. Beavers build houses out of aspen boughs and muskrats build houses from cattails or reeds. Pheasants nest in high grass or in a shrubby fencerow and grouse make their homes back in the denser woods. Deer may hide in a dense grove of spruces or hemlocks or in a heavy growth of rhododendron. Song birds nest in dead leaves on the ground and at almost all altitudes up to the top of an elm. Even fish use tree roots or weed beds for shelters, and some even lay their eggs on underwater plants.

The basis then for animal life is the soil. If the soil is rich and fertile, plant life will be more luxuriant. The better the plant life grows, the more attractive the area will be for wildlife. Since we're all interested in wildlife for one reason or another, we should be interested in soil and soil management. Obviously the best way to be sure that we'll have a good supply of wildlife is to be sure that our soils produce plants animals need.

The first thing to do is to convince yourself that soil and plants are important to wildlife. You can do that by taking a hike out in the country, around a farm or even just on the edge of town. Try to find examples of these contrasting areas: a grazed woodlot and an ungrazed woodlot; a burned over area and an area nearby that hasn't been burned; an eroded field or hillside and one that has good plant cover on it; a strip-cropped field and one that is a solid planting of row crops; a marsh that has been drained and one that is still wet; a field that has been planted in the same crop for years and one where rotation has been carried out.

It won't take long to see the difference. You are bound to see more animals, or more signs of animals in the areas where the soil is in good condition and producing a healthy growth of plants. Perhaps the animals themselves may not be evident, but look for tracks, bird nests, runways in grass or weeds, signs of feeding such as seed shells or acorn shells in a pile. Look for droppings too. All these indicate that animals use the area.

The next thing to do if possible, is to visit a game management area or private or state game refuge with the manager or conservation technician. Find out what is being done to make the area better for game birds and mammals. How is the soil managed so that it produces plants for food and cover? What else is done to make the area produce more animals?

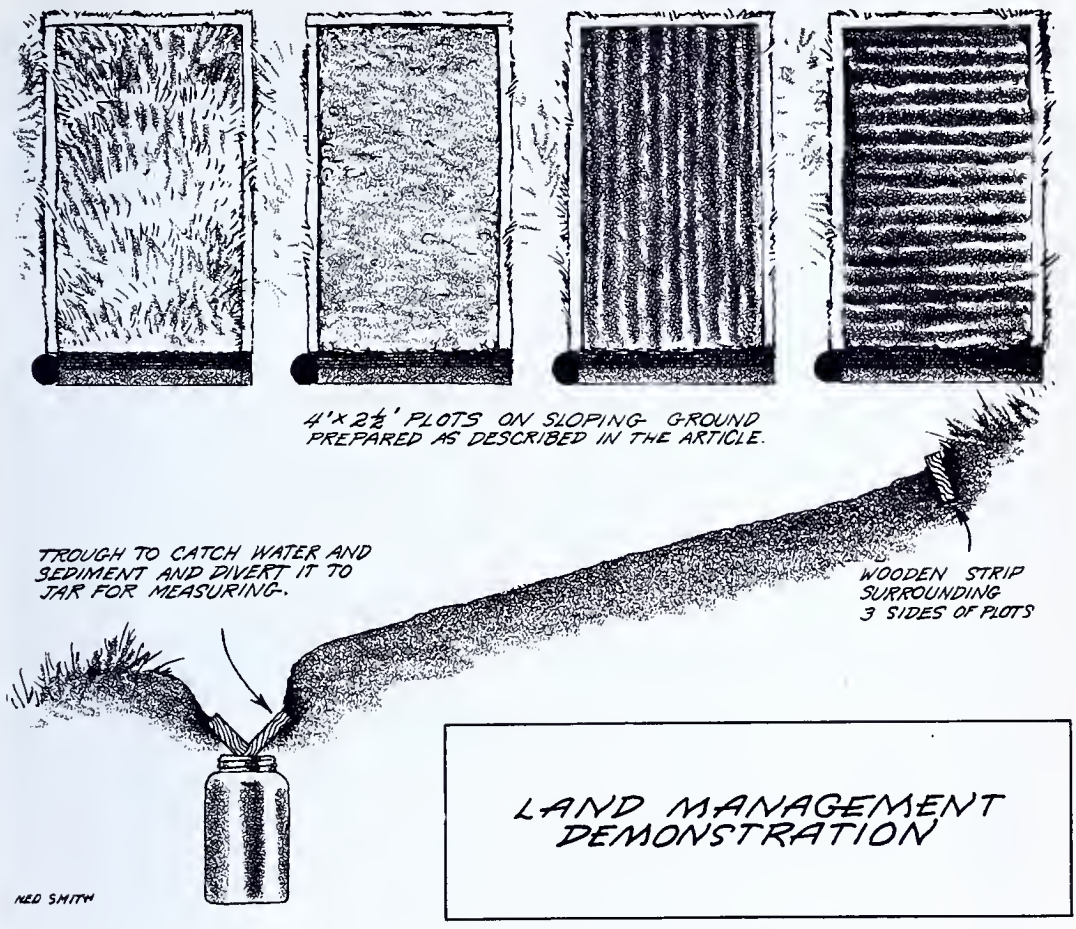
How Soil Is Destroyed

One way in which soil is destroyed as far as its productivity is concerned is through poor farming practices—practices that remove plant cover during the rainy or the windy time of year so that soil washes or blows away. Another thing that causes soil erosion is plowing up and down the hill. You can see for yourself exactly how it happens with a rather simple experiment that you can carry out in your yard or any other open area where there is a slight slope.

First you'll need some string and sixteen short stakes. Stake off four areas each 4 feet long and 2½ feet wide on the slope with the 4 foot sides running up and down hill. The areas should be side by side, with the same degree of slope but with about twelve inches between them. After you have driven in the stakes to mark the corners of each area, connect the stakes with string so you have four rectangles staked out.

Next dig narrow trenches three or four inches deep and an inch or two wide along the up hill end and the two sides of each area. Use the string as a guide. Cut some old boards or lath the right length and place them in the trenches around the four areas.

On the downhill end of each area, dig out space the width of the area,



LAND MANAGEMENT DEMONSTRATION

five inches deep and four inches wide. Make a V-shaped trough of boards in this trench so that the top of the V is three inches or so below ground level and so that the trough fits tightly against the sides of the trench. The trough should slant downward slightly across the hill. At the lower end of the trough in each of the four areas dig out a hole and sink a jar or can in the ground so that water running out of the trough will run into the can or jar.

Now mark the areas with numbers —1, 2, 3, 4. Number 1 is completed. Leave it the way it is. But carefully remove any sod from areas 2, 3, and 4. When the sod is removed, area number 2 is completed. With a trowel, garden fork or shovel carefully soften up the soil in areas 3 and 4 to a depth of three or four inches.

Next assume that area 3 is a corn field that you are going to plow up and down hill. Use a stick, the trowel, or a large spoon and make furrows about four inches apart and an inch or two deep running up and down the slope.

In area 4 assume that you are a farmer who has signed as a cooperator in his Soil Conservation District and knows about the right way to plow. Make furrows across the slope—at right angles to it. The furrows should be an inch or two deep and four inches apart.

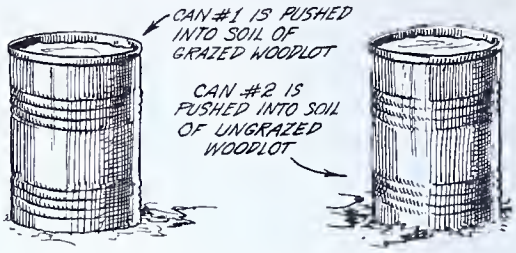
Now comes the easy part of the project. Wait for rain. If you are in the middle of drought and it doesn't look like it will ever rain again—and you want to finish the project qiuckly, get a five gallon pail of water, a sprinkling can and a one gallon measuring can.

Pour one gallon of water into the sprinkling can. Carefully sprinkle the water on area 1. Sprinkle one gallon on area 2; one gallon on area 3 and the same on area 4. Watch what happens. Remove the jars or can from the holes and examine them. What is in the jar besides water? In which container is there the most sediment? Why do you suppose?

Pour out the water and rinse out the jars. Replace them in the holes. Now cover area 2 with some dead leaves and duff from a woods. Smooth over area 3, and make furrows that run across the slope. Try sprinkling more water on areas 2 and 3 and see what happens now. Can you see how certain farming practices will hold soil on the land where it can produce plants for wildlife food and cover? Can you see how good farming practices will keep silt from washing into streams and lakes where it may be harmful to fish?

Another rather easy project will show what happens to water that falls on areas where the top soil has washed away and only hard sub soil remains. The same thing happens in a woods where cattle have grazed, or too many deer have browsed, and the soil has been stripped of plant cover on one hand and become impacted by the animals' hooves on the other. The same thing happens in your school yard or ball field where the grass has been worn away or on your favorite campsite where some fellow has swept all the leaves and duff away so the camp looks like the park in town.

Cut the top and bottom from two or three ½ gallon tin cans or from #5 cans—the size that fruit juice come in. Push one of the cans an inch or so into the hard, impacted soil of a grazed woodlot; push another can into the soft, springy soil of an ungrazed woods. Fill the cans with water and watch them. Use your watch to see how long it takes for the water to soak into the ground.



BOTH CANS ARE FILLED WITH WATER. WHICH WILL BE EMPTIED FIRST BY THE WATER SOAKING INTO THE GROUND?

Try the same experiment in an eroded field or in any other place where top soil has been washed away and the sub soil is exposed. In comparison, push another can into a good lawn or grassy area. Fill the cans with water and measure the length of time it takes for the water to soak in. You get the idea by now. Good top soil soaks up water more quickly. Soil that is rich in decayed leaves and grass soaks up water. Hard, impacted soil or sub soil will not soak up water as fast—and if it were not for the can the water would run off causing more erosion. The best protection for soil is a plant cover and the right kind of farming practices. Protected soil soaks up water and does not wash away. Rich soil that soaks up water grows better plants, plants that provide homes and food for wildlife.

It seems obvious that an important way to help wildlife is to protect wooded areas and ponds and marshes from grazing animals. The best way to do this is build a fence around the pasture to keep the cattle in—or around the woodlot and pond to keep the animals out. Wire fences can be used, or better for wildlife, is a "living fence." This is not the time of year to plant such shrubs as multiflora rose bushes that grow into a strong, stock proof fence if planted correctly. Spring is the best time for planting. Even small areas—one quarter to one half acre plots of suitable food and cover, will provide "islands" for wildlife if they are protected from grazing animals.

Another thing that can be done now is to look for signs of erosion—either small gullies that are just getting started, or places where the plant cover has been destroyed and where erosion may start.

Small eroded gullies may be checked very effectively by building a series of dams—from several feet to fifty feet apart depending upon the slope—along the length of the gulley. The dams may be made from rocks and brush; or poles with brush stocked against them. These dams will slow up water and eventually silt will help fill the gulley, if the surrounding land from which the water drains is also managed to hold back water.

Another method of stopping erosion that has not reached the serious stage is to plant grass or other cover crops on the eroding area. The sides of small gullies may be graded —that is smoothed down—and then planted. Until the grass takes root and starts to grow it may be necessary to cover it with a mulch of straw, hay or small brush. This mulch will help break the force of the rain and keep it from washing the seeds away.

Larger gullies and severe erosion will require the work of experts—and you would do well to report any serious erosion to your Soil Conservation Service District Conservationist.

Grasses of several kinds may be planted now on acres where erosion may occur because the plant cover has been destroyed. Some of the grasses not only prevent erosion, but they also provide food for wildlife.

There may be an Izaak Walton League Chapter in your area whose Johnny Grass Seed program would interest you. League members in many places package seeds in small envelopes, and carry them on fishing trips or hiking and camping expeditions. They plant the seeds in any suitable places they find along the way.

If you live on a farm, or spend the summer on a farm, or have friends or relatives who operate farms, here's another stunt that helps wildlife. When the haying is done, or crops such as oats, wheat, barley corn, buckwheat or clover are harvested, leave some for wildlife food. A few odd strips of patches here and there—along the fence, in corners, near trees —will be useful to wildlife later on as food. Quail, pheasants and rabbits find food in these places, and the patches or strips may also provide a hiding place for the animals from an enemy.

There are lots of ways in which you can help game birds and other animals. One very good way is by helping prevent erosion and by building up the soil that grows the plants that animals use for food and shelter. What you do now is really insurance for your own future sport.

We Really Are Nice People

The chances are good that a man who buys a hunting and fishing license intends to spend his time out-of-doors. This is borne out by the findings of J. T. Jones, former jailer in Knox County, Tennessee, who checked the personal effects of more than 20,000 persons committed to the prison, the Wildlife Management Institute reports. Jones, a sportsman himself, found that more than 98 per cent of the persons in trouble with the law had neither a fishing nor a hunting license.

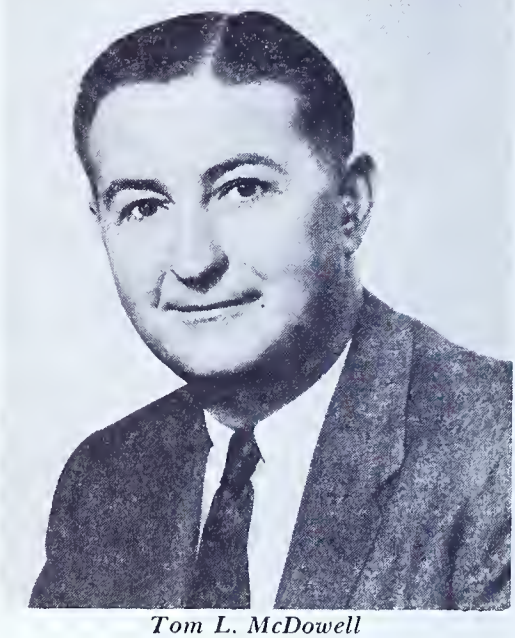


Tom L. McDowell Named Northcentral Commissioner

Governor John S. Fine has appointed Tom L. McDowell, of Bradford, McKean County, to membership on the Pennsylvania Game Commission. The appointment took effect May 19th.

The appointee, born in Bradford in 1911, attended local public schools and was graduated from the Wharton School of Finance and Commerce of the University of Pennsylvania in 1933 and the Law School of the University of 1936. The new commissioner is a member of the American, Pennsylvania and McKean County Bar Associations. In addition to the practice of law, in partnership with his brother, Mr. McDowell has numerous business interests in the Bradford area. Fraternal affiliations include Bradford Lodge, No. 749 F. & A. M., Coudersport Consistory, Zem Zem Shrine Temple, Elks and Moose. He is a member of the First Methodist Church of Bradford, serving as a trustee and member of the official board. He is also a trustee of the Bradford YWCA and a director of the YMCA.

The new commissioner is an ardent hunter and fisherman. He is married and has two sons. Along with his outdoor knowledge and interests in sportsmen's affairs, Mr. McDowell's legal and business background mark him as a splendid choice to the wildlife authority. He fills the Commission vacancy created by the resignation of Joseph P. Wilson, Smethport, now serving as a federal judge. The appointment of the new member brings the eight-man Game Commission to full strength.



Tom L. McDowell

SPECIAL FOX HUNTING PETITIONS FILED

The season for training dogs on wild birds and animals closed March 31, 1954. Such training will not again be permitted until August 1 of this year.

But, under the provisions of the law, the Game Commission shall permit fox hunting with dogs throughout the year, except the 60-day period between April 1 and May 30, 1954, in any county that submits a petition signed by 250 or more of its residents who held hunting licenses last year or who are farmers or sheep raisers.

Special fox hunting petitions for this year have been filed, in compliance with Game Law requirements, by the following counties: Blair, Erie, Fayette, Greene, Indiana, Lancaster, Northampton, Schuylkill, Susquehanna, Venango, Washington, and Westmoreland.

Pennsylvanian Elected President Of American Conservation Information Association

Leo A. Luttringer, Jr., Chief of the Pennsylvania Game Commission's Division of Conservation Education, has been elected president of the American Association of Conservation Information. The high honor was accorded the veteran staff officer and former editor of GAME NEWS at the Association's 15th Anniversary meeting held at Monterey, California in early May. Luttringer was one of the original founders of the organization and has served as secretary as well as on numerous committees, including chairmanship of this year's important Professional Standards committee. Other officers elected to head the Association for 1954 include vice-president Harry Lutz, of the Kansas Forestry, Fish and Game Commission; and secretary-treasurer Ed F. Dolder, Chief of Conservation Education for the California Department of Natural Resources.

The Association is composed of various representatives of 49 government conservation organizations in 41 states and two Canadian provinces. As a highlight of their 1954 meeting, the Association made national awards to individuals and groups who made important contributions to conservation education during the past year. Award winners included: Ducks Unlimited for their motion picture on the Canada Goose; Mike Hudoba for journalism in connection with his articles in *Sports Afield* magazine; R. W. Trippensee for his book on wildlife management; William Voigt, of the Izaak Walton League, for his efforts in behalf of youth education; and the National Broadcasting Company for the best national history TV program.

In Memoriam



Judge Grover C. Ladner

Grover C. Ladner, former state Supreme Court justice and one of the Commonwealth's leading conservationists died May 26 in Philadelphia following a long illness. He was 69.

A native of Philadelphia and a lawyer since 1906, Judge Ladner was on the bench of the Philadelphia Orphans Court from 1937 until July, 1950 when he was appointed to the Supreme Court by former Governor James Duff. After leaving the court he devoted most of his time to fighting for many conservation causes and to practicing law. For many years he was a leader in the Pennsylvania Division, Izaac Walton League of American and served as president and director of the Pennsylvania Federation of Sportsmen's Clubs. He was particularly interested in the Clean Streams Program.

Judge Ladner was not only an able, brilliant champion of justice—he was an outstanding champion of many conservation causes. Pennsylvania has lost a fine public servant and a true conservationist.

Choosing The Hot Shot

By Ed Shearer

THE growth of our modern version of varmint shooting can be traced to the birth of our first 22 caliber hot shot, the 22 Hornet. This brain child of Captains Wotkins and Woody—*et al*—coupled to the fact that automobiles began to fall within the price range of Mr. Average Man, sparked the way for today's legion of varmint hunters. Arms manufacturers, gunsmiths and a whale of a lot who were gunsmiths by proxy, eyed this lucrative source of revenue and jumped on the band wagon.

In the following years shooters were treated to a veritable barrage of wildcat cartridges based on various cartridge cases or just plain imagination. To add to the confusion, each gunsmith seemed to have his own ideas on chamber measurements, even for the same cartridge. Out of this mess has emerged today a number of super-accurate 22 caliber cartridges which are referred to as hot shots.

There are two classes of hot shots that concern the varmint hunter. One is the factory hot shot meaning that the rifle and ammunition can be bought across the counter. The other is the wildcat in which the rifle must be made up by a custom gunsmith on some action to suit the customer. The ammunition is not made commercially and must be hand-loaded.

Chamber and cartridge measurements are, of course, well standardized on the factory products. The reputable custom gunsmiths have gotten together and pretty well standardized the wildcats. They all have one thing in common. In a good rifle, properly loaded and with good bullets, they will shoot the whiskers off a woodchuck at unbelievably long ranges.



The modern varmint hunter is the best precision GAME shot since the days of the old buffalo hide hunters. It's bullseye's or nothing with pinwheels on small targets most of the time. But never before has such super accurate equipment been available at a price the average hunter could afford. Looking over the field of hot shots and telescope sights, the newcomer is often uncertain as to which to buy. This choice depends on what the hunter wants the outfit to do.

A combination that would be fine for whacking a chuck's ears off at 150 yards could be a poor bet at 250 yards. If you yearn to bust a chuck across a "coup'la" townships, it's going to cost you plenty of folding money. Ambition always comes high. There are two basic rules for the newcomer. Stick to factory hot shots for which you can buy both cases and ammunition over the counter. Then figure the cost of a telescope sight along with the rifle. How much this will cost depends on the range of the rifle. The longer the range, the better scope you will need and the more it will cost. A hot shot without a scope is no better than any other rifle, with metallic sights. Having reloaded for and hunted with all the factory hot shots on the market today, here is how they stacked up for me.

I first used the 22 Hornet when Winchester started making factory ammunition for it. The rifle was a Sedgely custom built with a Winchester 5-A target scope mounted on it. I was in the Forest Service at the



One of the best hunting safety campaigns of 1953 was sponsored by The Corry Chamber of Commerce. Here F. Bettes, Chamber secretary; Howard Sheen, Corry high school principal; and Bob Parlaman, Game Commission Conservation Education Assistant, study safety codes for hunters. The high school assembly program opened the campaign on October 26th. Other methods used included extensive newspaper publicity, radio broadcasts, and movies.

time and always had this rifle and later, a Savage 19 H, in the car. Both of these rifles were deadly on varmints up to 150 yards. Sighted in to put the bullet 1 inch high at 100 yards they both shot about 1 inch low at 150 yards. On a dead still day you could stretch it out to 200 yards on chuck sized targets and still get a respectable percentage of hits.

I soon found that the little 45 grain bullet at 2600 ft. sec. velocity became wind happy at over 150 yards in the slightest breeze one encounters on most days. I read a lot of criticism at that time about the daily shift of impact with the Hornet. I did a lot of shooting at the time on a 100 yard range well protected in a deep cut. My records showed that both rifles with a clean cold barrel would throw the first shot about two minutes out and then come right back in the normal group, day in and out. However a perfectly sighted-in Hornet will shift its impact, especially at 100 yards or over, in a 5 mile wind which is seldom noticed by the average hunter.

With factory ammunition both rifles average about 1½ minutes of angle at 100 yards and close to one minute with the best handloads. The small 45 grain bullet seemed to pack plenty of punch even on porcupines which are usually bigger and tougher than chucks. I found the hollow point bullets gave a high percentage of ricochets and washed them out with no loss in killing power.

In reloading the Hornet a word of caution would be in order. The modern Hornet cases are of much heavier construction which gives

smaller powder capacity. Consequently some old loading tables give dangerous pressures. While a large number of factory rifles have been chambered for the Hornet in the past, the ones available today are the Savage model 342 and the Winchester in the models 43 and 70. With a 4 power scope this cartridge makes a fine combination in settled districts where noise is objectional and the shooting seldom goes over 150 yards.

The 218 Bee which shoves a 46 grain bullet along at 2860 ft. sec. velocity can also be had in the Winchester Model 43. This rifle had a 4 power Weaver scope and the accuracy ran about the same as the Hornet in the same model rifle. The Bee gives a slightly flatter trajectory and the cartridge case is better from a reloading standpoint.

One of the best hand loads I found for this cartridge was 14.5 grains of DuPont 4198 powder and the 50 grain Sierra bullet. This load gave about 2800 ft. sec. velocity and had better wind bucking ability than the factory load. All things considered the Bee is so close to the Hornet in practical hunting performance that the same conclusions can be drawn for both. They make fine outfits in settled farming districts and can be bought for a modest price.

When Remington brought out their 222 adapted for use in the Remington short action model 722, it caught on like wild fire. This is not based on another cartridge but is an entirely new design by Remington engineers. It drives a 50 grain bullet at 3200 ft. sec. velocity. It is the one factory hot shot that can hold its own with the 220 Swift which has long been considered the most accurate factory rifle made.

The 222 cartridge has made quite a reputation with bench rest shooters, breaking one world's record and making many wins. This is also a very flexible cartridge seeming to do well with almost any load you put in it. In my rifle 21 grains of DuPont 4198 shoves a 55 grain bullet along at 3100 ft. sec. instrumental velocity which is close to factory muzzle velocity. The accuracy is less than a minute of angle. With this load sighted center at 200 yards, 16 grains of DuPont 4227 and a 50 grain Sierra bullet is right on the button at 100 yards. This is a good turkey load giving 2600 ft. sec. velocity and minute of angle accuracy. I have shot the 222 a lot since it came out on various varmints and with hand loads using the 55 grain bullet have found it reliable to 250 yards, under good conditions. It has plenty of killing power and a mild report. It takes a good scope of at least 6 power to get the best out of it. The 222 may be had in the Savage 342, the Sako and Remington 722 rifles.

The Ace of the factory hot shots is the famous 220 Swift. This remarkable cartridge shoves a 48 grain bullet at the terrific velocity of 4140 ft. sec. velocity. The accuracy in any good rifle with hand loads will average a minute of angle or less. The trajectory of this speedster is so flat that with the rifle sighted on the nose at 250 yards, at 150 yards the bullet rises only 2 inches and at 300 yards it is 2 inches below the line of sight.

This is the outfit for the expert who likes to shoot varmints way out yonder, and is willing to pay important money for it. To get full performance out of the Swift calls for a fine scope of at least 10 power with large objective lens that have large resolving power. The X hairs or dot should not cover more than a minute of angle. Less if you can see them as your targets will not be moving.

In hand loading the Swift factory ballistics should not be attempted as factory pressures may run to a maximum of 55000 pounds pressure. This gives short case life as well as barrel life and plenty of other troubles. The best accuracy is found in the 3600 to 3800 ft. sec. velocity bracket, with



Photo by Henry M. Blatner

Right on the line—and you've got to look close! Rigid safety rules must be followed on the range.

pressures easy on the cases and barrel.

My favorite hand load for the Swift is 43 grains of DuPont 4350 powder behind a 55 grain bullet. This load gives close to 3700 ft. sec. velocity and pressure of 46000 pounds. The accuracy is tack hole. I have killed chucks out to 400 yards and is a good wind bucker. With the Swift it can be said that it is as good as the scope you put on it. The Winchester Model 70 is the only domestic rifle made for this cartridge. The draw backs are the loud report and the price. The one bugaboo with all hot shots is wind. On most days you will find yourself running out of wind size before group size on varmints.

So it looks like this on factory hot shots. The hunter who haunts the settled districts and is somewhat of a stalker will find the Hornet or the Bee with a 4 power scope both satisfactory and least expensive. If you want 250 yard range it's the 222 Remington cartridge with at least a 6 power scope, and it will cost more money. If you go all out, it's the Swift with at least a big 10 power scope and costs plenty of the long green. It's where you want to shoot and how far. Either way, "Once a varmint hunter, you'll always be a VARMINT HUNTER."

. . . *The End*

WATCH OUT FOR WILDLIFE ON THE HIGHWAYS

Be extra careful when driving in deer country at night. Collision with a deer may wreck your automobile and injure you or your passengers. Deer, blinded by your headlights, will sometimes leap directly into the path of your automobile—or even into the machine itself. The darker the night, the more danger. Deer are fast on their feet. A touch on your brake pedal, a flick of your light switch and a touch of the horn will usually save them and your automobile and you.

Beginner's Equipment



By Tom Forbes

THE sport of archery has gained such momentum in the past few years that the facilities of the old line manufacturers have been strained to the limit to cope with the unprecedented demand for equipment during certain seasons. New companies are entering the field in increasing numbers and such a wide variety of equipment is offered for sale that the old-timer as well as the beginner is confused by the variety of equipment and the conflicting claims made by the manufacturers and dealers in archery equipment.

The situation is complicated further by the failure of the manufacturers to adopt industry-wide standards against which the various products could be measured and compared.

A little over a decade has passed since the choice of bow materials was limited to such woods as yew, osage orange, hickory, and lemonwood, and arrows were generally made from birch or Port Orford cedar. From these few possibilities it was not too difficult for an archer to choose a bow and arrows. The quality of the materials and workmanship could be judged fairly well by the individual and a purchase made within a price range suitable to the archer's pocketbook. Bows, with certain exceptions were all purpose bows and no thought was given to acquiring a bow or arrows for one special type of shooting.

In fact bows were of such simple construction that many archers, familiar with wood working tools enjoyed making their own equipment. To a small extent this practice continues to this day. Some manufacturers cater to this group by providing partially finished bow kits which permit the archer to do a good portion of the work necessary to build a bow. A number of archers still prefer to make their own arrows. Due to the wide range of materials used in the manufacture of bows and arrows today and the admitted superiority of the modern bow made from these materials few experienced archers attempt to make their own bows and rely instead on the manufactured product.

Although archery equipment has moved out of the toy section of your sporting goods store and occupies a prominent place along with the array of sporting arms, few are the salesmen who have any knowledge of the sport of archery or who have attempted to learn to use the weapon. Frequently the salesman of firearms has a thorough working knowledge of the weapons he has for sale. The bow as a hunting weapon, however, has but recently attained prominence. Most retailers have failed to keep pace with the demand for information on tackle and equipment. If your sporting good store has an archer in its employ, you are indeed fortunate. He can give you valuable advice on the selection of your first equipment.

It is a common experience to see a child equipped with a bow which is beyond his physical power to draw and shoot properly. This unfortunate condition generally stems from lack of knowledge on the part of the parent and of the salesman who sold it to him. Together they have almost

made it certain that the youngster will quickly tire of the sport when his pathetic struggles to master the weapon produce so little in the way of results.

A single example should be enough to convince anyone that advice from an experienced archer should be sought on the purchase of beginner's equipment. Several youngsters were shooting under my supervision at a target erected on my lawn. A ten year old riding by on his bike stopped and asked if he could bring his equipment and shoot. Permission was given and he soon appeared with a bow and arrows. The bow was marked with a drawing weight of forty pounds. It had been a Christmas present along with a dozen expensive footed arrows. The outfit represented a monetary outlay of at least $25.00. Needless to say that the child had had no instruction. His attempts to shoot were pathetic and the drawing weight of his bow precluded giving him even elementary instruction. It is a mistaken idea that the ability of an archer can be measured by the drawing weight of his bow and the prospective purchaser should take particular care to buy a bow that has a drawing weight well within his physical limitations.

The beginner should be able to bring the bow to full draw easily and without undue strain. It is understood that a bow is always shot from the full draw position. Unless the beginner can do this he will not readily be able to acquire correct shooting technique and measured by his lack of success in hitting a selected target he will get little satisfaction from the sport. Since physical prowess varies with each individual no hard and fast limits on drawing weights of bows for beginners can be given.

There are so many kinds of bows on the market today that to compare one with another confounds even the expect archer. In the hands of a qualified archer almost any one of the bows manufactured today can look like a good buy. Every archer, once he has acquired good shooting form, attempts to improve his scores by selecting the bow which he believes best suited to his physical makeup and the purpose for which he intends to use it. For example a bow purchased for use in the hunting field may have a drawing weight of fifty to eighty pounds but the experienced archer will have acquired proper shooting form and developed the muscles used in shooting by use of a lighter weight bow which he uses in competition and to practice markmanship.

A beginner should not buy expensive and specialized archery tackle and equipment. A light weight medium priced bow and a set of practice arrows, a leather shooting tab and an arm guard are all the equipment needed to learn to shoot the bow. Such a kit may be purchased or made up from individual items for as little as $12.50. After you have mastered shooting technique and can

Young archers should start with the proper equipment and constantly practice if they are to achieve success.

—Hazleton "Plain Speaker"
Photo by Phil Sarno



keep your arrows on the target will be time enough to consider the purchase of better equipment.

Whereas a rifle can be expected to give years of satisfactory service, bows have only a limited life and in general carry a guarantee for a year against breakage. Repeated flexing of the fibres of which the bow is constructed results ultimately in fatigue of the material. A bow which is shot or drawn repeatedly "lets down" or "follows the string" in the jargon of the archer, which means that it loses its power to cast or propel an arrow.

The beginner will save money if he goes slowly and does not expect that he can buy a good score by the simple method of acquiring the highest priced bow in the dealer's stock.

Bows that have a drawing weight of fifteen to twenty pounds make suitable starting bows for children and women. Teen-agers would do well to start with a twenty pound bow which will prove sufficiently tiring when shot throughout an afternoon. A number of my adult friends and acquaintances who have become interested in archery have bought twenty-five and in a few cases thirty pound bows with which they have learned to shoot. In no case have they regretted their purchase. It is a fallacy but a common belief that cast or velocity of an arrow increases directly in proportion to the drawing weight of a bow. Nothing could be farther from the facts. After you have learned to shoot, you will also have learned that cast varies from bow to bow and that each manufacturer is striving to produce a bow that has a high velocity or cast and at the same time a low drawing weight. To the extent that they have succeeded, archers are willing to spend considerable sums of money for a particular bow.

Bows of different materials differ also in length. The beginner is primarily concerned with the length of a medium price wood self bow which is a time proved product of the bowyers art and the proper length of arrows which he or she should purchase. To obtain this data measure the distance in inches from finger tip to finger tip of your outspread arms. In the table accompanying this article this distance is called Spread Measurement. The corresponding length of arrow and suggested bow length is now readily determined by inspection from the table.

Nineteen of the successful bow hunters in Pennsylvania last season reported to the Pensylvania Game Commission that they were hunting deer with a bow for the first time.

There is ample time between now and October for the beginner to acquire the ability to use a hunting bow and to gain sufficient confidence in his skill to send him forth in the special archery deer season in search of a buck.

EQUIPMENT TABLE

Spread Measurement	*Arrow Length*	*Suggested Bow Length*
57-59 in.	22-23 in.	Not less than 4 ft., 6 in.
60-62 in.	23-24 in.	
63-65 in.	24-25 in.	Not less than 5 ft., 0 in.
66-68 in.	25-26 in.	
69-71 in.	26-27 in.	Not less than 5 ft., 6 in.
72-74 in.	27-28 in.	
75-77 in.	28-29 in.	Not less than 5 ft., 9 in.
Over 77 in.	30 in.	Not less than 6 ft., 0 in.

. . . The End

Early Prospecting Pays

By Larry J. Kopp

BY EARLY prospecting I mean NOW! The trapper who excuses himself from this all important early start with the thought that it is too early, or too warm to prospect during the summer will unknowingly reap only part of the available fur animals in his trapping territory. Hurried and last minute prospecting trips just before the season do not reveal all there is to know about your territory. Many hidden factors which you should know go by unseen, and unexplored.

The trapper will be wise to remember the old saying "practice makes perfect." Applied to trapping it means that the trapper who devotes as much summer spare time as possible to becoming thoroughly familiar with animal movements in every nook and cranny of his territory will be assured of more fur money next trapping season. So, take a tip from the experts and prospect early and often.

By this time our common fur animals, including the skunk, opossum, raccoon, and muskrat have established their homes where they will remain until another spring. Raccoons make their home in hollow trees and in cavities found among rocky ridges. Skunks and opossums resort to old woodchuck holes, but often they make themselves at home under old buildings or under slab piles and similar places. The muskrat on the other hand builds its home in dens dug into stream banks.



Thus, with the family home well established, Mr. and Mrs. furbearer will be busy searching for food and caring for their young. This means, in other words, that where you now find these fur animals you will also be sure to find them next fall. Only rarely will a family of these furbearers leave its home and move into another area before the next spring mating season begins.

How to go about prospecting your trapping territory should not pose any problem since there are no set rules which you must follow. Thorough prospecting of a trapline is largely a matter of hiking and snooping around in the brush being always on the lookout for animal tracks; likely set locations; and "homes" of fur animals.

An exceptionally important point is to always carry along a notebook and pencil to keep notes of important details. In taking notes the first thing is to enter the month and date of your field trip. Next make a note of the weather conditions during the preceding night. Then as you observe anything which might be of help to you next fall continue to takes notes.

For instance when you find tracks of a certain fur bearer, jot down the name of the animal which made the tracks; and the location which is most important. As an example, your note might read like this: May 10—Noted raccoon tracks, traveling upstream, under old chestnut log lying across small run on farmer Brown's farm." The idea is to mention familiar or conspicuous objects at or near the spot which will help you recall the exact location months later.

Since fur animals of all types like to hunt for food along streams and small runs it will pay the trapper to make regular prospecting trips along all such waterways. Each trip will reveal some new fur sign, and later, by checking over field notes the trapper will be able to determine just what species of animals travel along a particular stream; how often a specific animals or species travels the same stream; and he can also determine the most ideal locations for future sets.

Although tracks are the most accurate signs of fur animals, there are other signs which the alert trapper should be on the lookout for. For instance, when the trapper finds a rock along the stream which is covered with numerous fish scales or parts of a fish, he can be almost certain that a raccoon caught a fish nearby, then proceeded to eat it, using the rock as his dinner table.

Shells of freshly opened mussels found along the edge of streams or in shallow water are another indication of the raccoon's presence. Raccoons dig these fresh water mussels out of the mud with their front paws, break them open, then eat the oyster-like mussel inside. Just how a raccoon manages to break open such mussels is still one of those unexplained mysteries, for it is indeed not an easy matter to open them with one's hands.

While it is true that raccoons find much of their food along streams in farm country, the wise trapper can also find similar signs of the animal along small mountain runs where the rocks are all covered with beautiful green moss. Here the trapper may find spots where much moss has been torn from the rocks; many of them recently turned. Here and there one may find small holes dug into the gravel, and these are all signs of the raccoon's nightly search for food. Along these pure little mountain runs the raccoon finds choice bits of food such as crabs and several species of salamanders which are found only among the green moss covered rocks where the hot rays of the sun seldom penetrate.



It pays to make frequent prospecting trips along waterways, looking for fur signs and possible trap sites.

Since muskrats are normally found only along streams, it is not so essential to pay much attention to signs at this time of year since most of it will be changed or obliterated by fall. However, since water levels are usually low during the summer, the trapper has a good opportunity to locate muskrat dens and make a note of their location.

During the course of such prospecting trips along waterways, the alert trapper is constantly watching for good natural set locations. Such places where an obstruction along the stream forces an animal to enter the water in order to get around it should always be noted in one's notebook. Other natural set locations may be formed by roots at the base of a tree. Frequently one will find fairly large V shaped openings which are just right for a productive raccoon or skunk set.

Natural passageways formed by

rocks along the stream; or hollow logs near the stream provide still more natural set locations.

Skunks and opossums also hunt for food along overhanging and grassy stream banks. But the best place to look for skunk signs is in grassy fields or corn fields. Here they spend many hours during the night searching for mice and insects. Freshly turned stones and numerous small holes dug in the ground are unmistakable signs of this popular fur bearer.

A diligent check of all old woodchuck dens along nearby fencerows or abandoned farm fields will in all probability uncovers a family of skunks. Sometimes such a skunk den can be detected by a skunky odor exuding from the entrance. Other evidence might be skunk droppings near the den; or perhaps a real close examination would reveal long black hairs clinging to the sides of the den.

Frequently skunks display a little more cunning than what they are usually credited with by actually depositing their dung some distance away from the den where it is hidden from the casual observer. I have accidentally located families of skunks when I found numerous skunk droppings at the base of a large tree. From this sign I knew that a skunk den must be nearby, and usually I found it from ten to twenty feet away from the tree. This is just one of the many interesting facts which the serious trapline prospector gets to learn. This means that when the trapper locates a likely looking skunk den, but with no apparent signs in evidence, he should make a search of the immediate surroundings for a distance of approximately twenty-five feet. Very likely a concentration of skunk droppings some distance away will provide proof that the den is occupied by skunks.

The opossum's feeding habits differ from the other animals under discussion in that he does not leave any particular signs which indicate his presence. However he eats all of the food items which wild animals are known to eat. In other words he eats almost anything, but seems to prefer that which is most easily obtained. Like the gray fox, 'possums are fond of rotten apples, grapes, and persimmons.

Since raccoons and skunks also are fond of grapes it is important that the observant prospector keep his eyes open for grapevines. When grapevines, including both the fox grape and the frost grape, are found, a note of their location should be made. When early fall arrives, these fur bearers will make regular visits to feed on the juicy ripe grapes.

I have purposely avoided mentioning the importance of building trap sites and other preparatory trapline work during the summer months because that can be done much better during the early fall. It is then that a thorough study of your summer field notes will help you select the best places for trapsites. . . . *The End*

Things You May Not Know

Honey bees carry water as well as honey. Special carriers bring it to the hive, dole it out, seal it in cells, or even act as storage tanks themselves until the water is needed.

* * *

The fact that the blood in their gills flows in one direction and the water in another enables fish to utilize the oxygen in water most efficiently.

* * *

New Guinea's Greater bird of paradise, noted for its magnificent and multicolored plumes, is a cousin to the common crow.

* * *

The wings of a butterfly are made up of scales similar to those on a fish.

* * *

The falcon has a sharp tooth and notch on its beak which enables the bird to cut its meat with a swift stroke instead of tearing it.

* * *

Summer Suggestions

By Herbert Kendrick

IT IS not difficult to persuade gunners to care for hunting dogs when the open seasons are announced, and trips afield are planned. However, when the seasons have closed, and our thoughts turn to fishing, far too often, I fear, we forget our dogs during the trying period of hot summer months. A little care and attention would make their summer life more pleasant and healthy, thus making them far more valuable animals when another hunting season opens.

A well-bred gun dog is a valuable asset and should certainly be well cared for every day of his life.

With the arrival of hot unpleasant days comes the usual swarms of insects and parasites to make your dog's life more of a "dog's life." These disease bearing plagues can cause serious sickness if they are allowed to go unchecked.

First of all the dog's house should be cleaned often, whitewashed, and supplied with cedar bedding. Cedar sawdust or shavings are a distinct discouragement to insects. The runways or yards around the dog house should be kept clean at all times thus preventing the breeding of parasites.

If a dog is kept in a double-wired pen, where stray dogs cannot contact your own, the insect problem will be kept to a minimum.

Dust your dogs frequently with a good reliable flea powder. This dusting will kill fleas and lice, while a good spray used wisely and often will prevent flies and mosquitoes from irritating the dog. A word of caution here, however, if your dog has puppies, be very careful to keep the powder and spray from the puppies' noses and the mother's breasts.

The next problem is that of heat for the dog *must* have shade at least during the heat of the day. Of course tree shade is best, but if his quarters cannot be located near trees, then artificial shade in the form of a roof or shelter must be provided for your canine friend.

One of the most important needs of summer is plenty of fresh cool water. A small pipe running from a house spigot down to the dog's water container is a handy way to keep him well supplied with minimum effort. If this arrangement cannot be made, supply each dog with a container that holds at least a gallon of water, and fill it at least twice every day.

An occasional dusting of air-slacked lime will keep the pen from becoming smelly and foul, and the water hose should be used to settle dust during the dry season.

Bathing a dog during the summer months is not as necessary as many believe. If he is powdered, brushed, given proper food, sufficient fresh water, and possesses general good health, his coat will stay glossy and silky. One of the best ways to judge a dog's condition is by the appearance of his hair.

The summer campaign for your dog's well being should surely include exercise. This is a double problem because it is too hot to allow the dog





The April meeting of the Game Commission was held "on the ground" at the new State Game Lands, known as "Devil's Hole", in the Poconos. Seated, left to right: Commissioners Biddle, Herman, Williams, Executive Director Bennett, and Commissioner Buchanan. Standing: Commissioner Long. Staff members Gilford, Minihan, and Heffelfinger.

to run, and our laws prohibit it. Either let him swim at every opportunity, or permit him to run around the yard in the cool of the evening. Keep him on a long check cord if you live dangerously close to highways.

Summer diet for the dog should include more protein, less fats and carbohydrates. Less food will be needed in hot weather than in the cold winter months when he is much more active. First rate prepared foods on the market today greatly simplify our summer feeding problems.

Be certain food is not left in the pan to become spoiled and later eaten with a fresh supply. During the summer it is better to feed twice each day, light in the morning and heavier in the evening. Do not overlook a chance to give him a good bone from the market, because it will help his teeth, and give him something to do during the long warm hours.

For the individuals who have acquired puppies, the evenings of summer months are ideal for yard training. Manners, housebreaking, teaching to whoa, sit, heel, etc., can be handled in warm weather, provided the lessons are not too long.

If the dog is old enough, the rough task of forced retrieving may be completed. Take plenty of time for this course of study, and your dog will be of greater service.

Allow your dog to sit with the family on the porch in the evenings, and take him along for a drive in the automobile when it is convenient. He will deeply appreciate the association with the family, and the change from the kennel yard.

Spend all the time you can with your hunting partner during his "trying period," and he will know and appreciate your friendliness and care, and when the frost comes he will reward you with a superlative performance every time you take him afield.



OUR WILDLIFE LEGACY

By Durward L. Allen

Illustrated with 26 black and white photographs. Published by Funk and Wagnalls Company, 153 East 24th Street, New York 10, N. Y.

422 pages. **Price $5.00**

This is one of the finest books that has been written about the management of fish and game resources. Its purpose is to give the responsible citizen "an adequate boil-down of wildlife science that is properly related to the conservation (wise use) of other resources. The goal is a sound conservation philosophy from which any intelligent person can factor problems as they arise and reach his own logical decision." In a coherent, readable, and popular style, the author analytically appraises the different species of fish and game, their known capabilities and limitations, their requirements, and their response to various factors. This is a book which should be read and studied by sportsmen, naturalists, professional wildlife workers, outdoors writers; in fact, all groups and individuals who in any manner have anything to do with our renewable natural resources.

WILDLIFE IN ALASKA

By A. Starker Leopold & F. Fraser Darling

Illustrated with maps and photographs. Published by The Ronald Press Company, 15 E. 26th Street, New York 10, N. Y.

129 pages. **Price $2.75**

Here is a timely report on the status of wildlife in one of the last unspoiled regions of the world—Alaska. Beautifully written by two eminent conservationists, it offers significant recommendations for fostering the development of Alaska's invaluable wildlife resources—especially caribou, moose and reindeer. Sponsored by the Conservation Foundation and the New York Zoological Society, the authors carried out an extensive field study upon which their book is based. With Alaska's economy in mind, they spell out the general ecological problems and indicate the broad approach to planning and research needed for intelligent management of Alaska's living resources. Conservation-minded citizens, legislators, government officials, and sportsmen will find it a valuable and thought-provoking book.

Suggestions FOR YOUR *Summer Reading*

HOMEMADE FISHING

By Verne E. Davison

Illustrated with black and white sketches by Wallace Hughes. Published by The Stackpole Company, Telegraph Press Building, Harrisburg, Pa.

205 pages. **Price $4.50**

One of the great conservation discoveries of this age has been the correct management of new waters which have been properly constructed to furnish additional fish and improved angling. This book is particularly timely. Thousands of new ponds are under construction, more will be built tomorrow. If you invest in a pond for your land, a copy of Verne Davison's book should be readily at hand. Included in detail is information about warm-water and cold-water ponds—all the way from site selection to how to catch more fish. Other chapters discuss selection of fish species to be stocked, where to get them, fertilization to increase food supply, side streams and ponds for trout, those troublesome waterweeds, and the use of poisons.

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

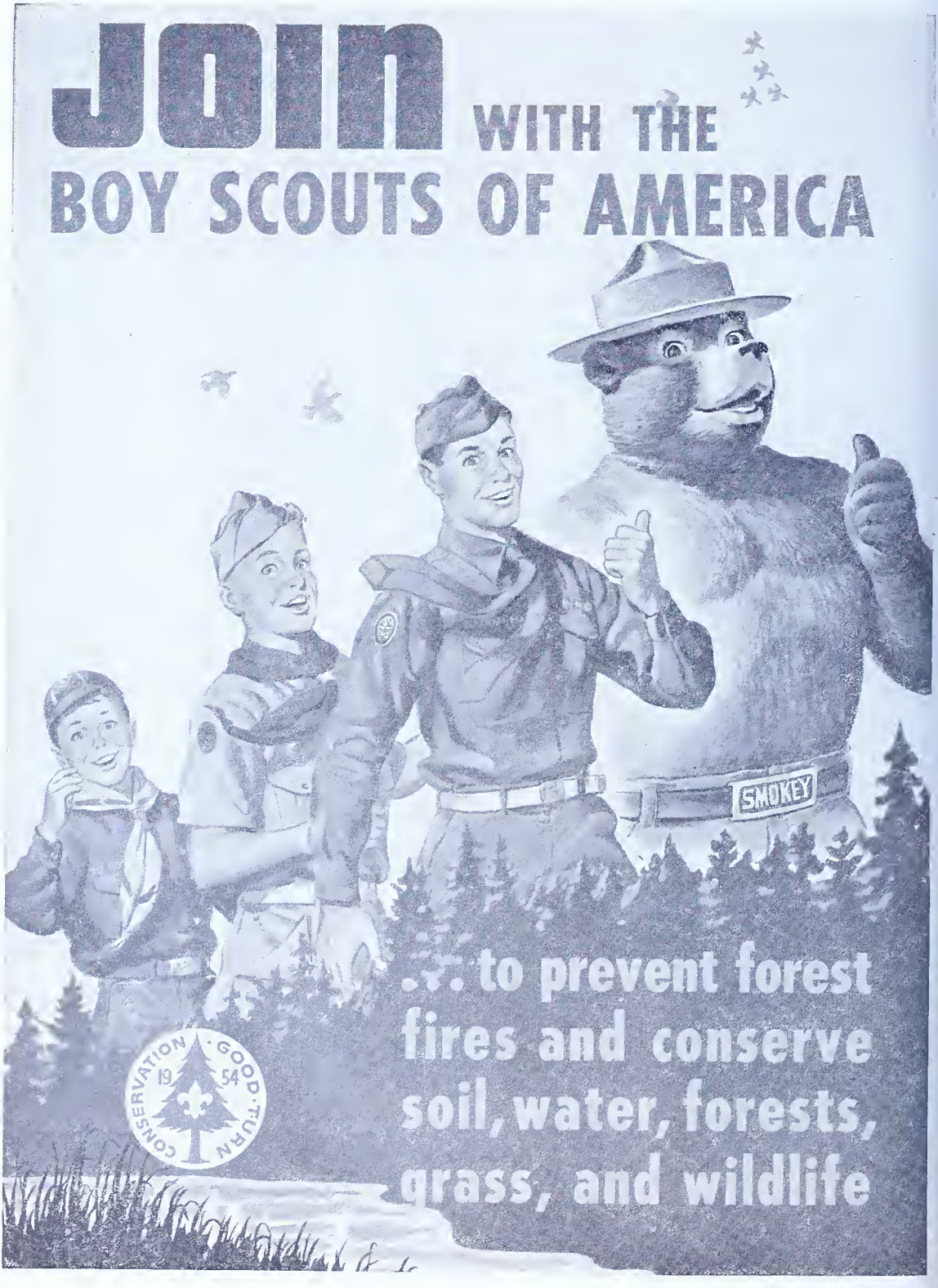
NORTHEAST DIVISION—C. C. Stainbrock, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.


JOIN WITH THE
BOY SCOUTS OF AMERICA
SMOKEY
CONSERVATION · GOOD TURN
19 54
. . . to prevent forest
fires and conserve
soil, water, forests,
grass, and wildlife

PENNSYLVANIA

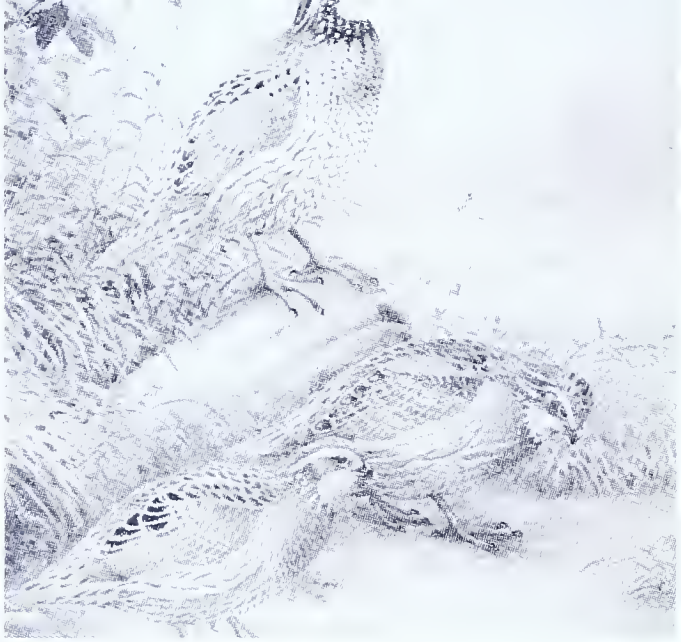
Game News

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

AUGUST 1954 10 CENTS

P38.34
116





THE STORY BEHIND THE COVER

QUAIL are calling—not now with the urgency of last spring's mating season but nonetheless thrilling and cheerful. From Pennsylvania's fertile valleys to the wooded hills, farmers, sportsmen and game managers pause to listen for the whistle of bobwhite. Not since 1936 have these clear, musical notes sounded so often or in so many parts of the Keystone State. Still, the calling of the quail is not common in the quiet dawning of these August morns.

A pair of bobwhites raise only one brood of young a year although several re-nestings may be attempted if early clutches are destroyed. About 14 eggs are laid in late April or early May. Quail are devoted parents, the male frequently doing his share of incubating the eggs and always helping rear the chicks. During the past three months a generous Nature has made every effort to provide increased quail populations; man, in large part, controls their destiny.

Following a year of complete protection, first since 1926, all Pennsylvania has watched and listened for bobwhites this summer. To many old-timers, each whistle has brought back memories of "hammer guns" and black powder, of zig-zag rail fences half buried in honeysuckle and weeds, of the pulse-quickening whirr of a bursting covey.

But today, if an accurate forecast of the quail's future is to be made, it must be based on the answers to these questions: How much has the bird's habitat changed? Is there more natural food and cover? What effect did the wet, cold spring and later farming operations have on nesting success? How many stray house cats and marauding Cooper's hawks included bobwhite on their menu this year? Will hunters give this magnificent game bird a chance by holding their fire on any covey containing less than eight birds, regardless of season or bag limit?

Few species respond so quickly to management or mis-management as bobwhite quail. Yet rules and regulations, bounties on predators, or loud discussions will not, by themselves, save the only bird that calls his own name. Today's situation demands active interest, planning, and most of all, just plain work. It requires money and effort—to buy the all-essential food and cover plants, to plant them on the land. And it will take time to restore bobwhite's home—a home that has been cut, eroded, burned, and clean-farmed almost out of existence.

With an aroused and interested public, an eager and cooperative army of hunters, and an appreciative and understanding host of landowners, the bobwhite quail can make a come-back in Pennsylvania.

PENNSYLVANIA
Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Tom L. McDowell .....Bradford

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 8
August, 1954

CONTENTS

Bonnie and Rip 4
By Archibald Rutledge

Don't Chuck That 'Chuck 9
By Keith Schuyler

A New Wild Waterfowl Management Area 12

Susquehanna Shows The Way .. 14

A Brief History of the Indian Hunter 19
By John Witthoft

Field Notes 24

Federal Aid in Wildlife Restoration—Southcentral Pennsylvania 28

Financing Pennsylvania's Wildlife Program 36
By N. E. Slaybaugh

★

Cover Painting
By
Earl L. Poole

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



PGC Photo by Bob Parlan

Editorial . . .

Conservation's Canine Asset

FOR many Pennsylvania sportsmen August's warm sunshine illuminates as many thrills and equally as much real pleasure afield as November's crisp coolness. Except for a change in weather and landscape color, the fields and forests on the first day this month can easily match in excitement and achievement that of three months later. As another dog training season opens the sight of man and dog, working together as a team, is common in every corner of the Commonwealth. Only the sound of gunfire is lacking—and seldom missed.

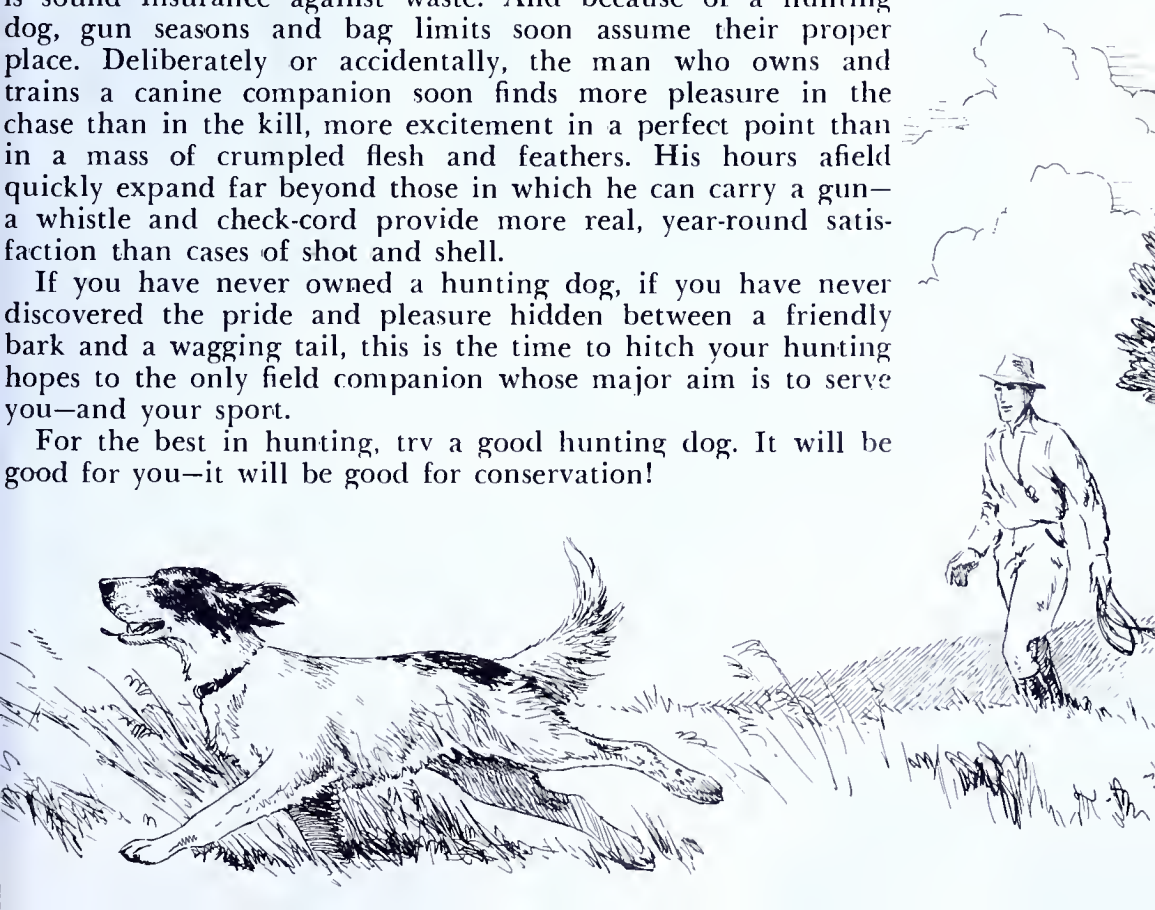
To men of all ages and all countries, the dog has served as a companion second only to man's own kind. From kings to kids, professional trainers to tyro hunters, sportsmen have found in dogs a devotion, loyalty and courage second to none. Whether it be "Tally-ho" or "Steady," the signals which pass from man to canine exemplify the best in mutual understanding and love for the sport.

Those who have never hunted behind good field dogs have missed a large part of the enjoyment and satisfaction possible in hunting. There is a thrill in seeing a stylish setter pin down a hidden grouse; there is equal excitement in a beagle tonguing the line on a fleeting rabbit. And there is even a thrill in watching a nondescript mutt stalk a ringneck through dense cover.

But even though all dogs do not mean the same things to all men, there is one canine characteristic that remains constant. A good gun dog is the best conservation asset a man can own. Each crippled bird or bunny retrieved by a working dog is sound insurance against waste. And because of a hunting dog, gun seasons and bag limits soon assume their proper place. Deliberately or accidentally, the man who owns and trains a canine companion soon finds more pleasure in the chase than in the kill, more excitement in a perfect point than in a mass of crumpled flesh and feathers. His hours afield quickly expand far beyond those in which he can carry a gun—a whistle and check-cord provide more real, year-round satisfaction than cases of shot and shell.

If you have never owned a hunting dog, if you have never discovered the pride and pleasure hidden between a friendly bark and a wagging tail, this is the time to hitch your hunting hopes to the only field companion whose major aim is to serve you—and your sport.

For the best in hunting, try a good hunting dog. It will be good for you—it will be good for conservation!



Bonnie and Rip

By Archibald Rutledge



YOU may talk about buying your trained dogs; but no bird-dog in all the world means so much to a hunter as one he has raised and trained himself. And for that matter, no man means so much to a dog as the one who has fed him, scolded him, praised him, and punished him. It has long been my feeling that a good dog teaches a man about as much as a man teaches a dog: indeed, I have had some dogs that taught me more than I ever did them.

As a rule I never like to break more than one puppy at a time. It's a good plan to break a puppy with a finished dog; but two youngsters are prone to play together, even when taken afield for serious business. That year, however, when I had planned to break Bonnie alone, Rip was given me; and my nature being such that I can resist anything but temptation, I simply couldn't refuse Rip. Thus it came about that I had two babies on my hands at once. Yet from the beginning they were such distinct individuals that they had to be broken in entirely different ways. I hope by telling their story to afford the reader some ideas as to how I proceed in breaking a bird-dog. I know that there are some fine books on this subject; yet often we can gain more from one concrete example than from learned theories.

The grandson of Carolina Frank, a champion in his own right, Rip was a pointer of the pointers; and while he was still so little that a columbine would throw him off equilibrium, he displayed all the vices and all the virtues of the pointer breed. Whatever truth there may be in the legend, that strain is supposed to have originated out of a cross between the spaniel and the hound; the former supplying stamina and the latter nose. There will be those who may disagree with me, but my experience leads me to believe that as a rule the pointer has a slight edge over the setter when it comes to the power of scent. The pointer seems made strictly for business: streamlined, he is all bone and muscle. But he can be stubborn, hard-headed, difficult to manage. He can also absorb a lot of punishment without appearing to be especially impressed. Rip was like that. He took a licking as a mere matter of course, and a few minutes later was sinning again.

Bonnie, an English setter, that I bought in the Valley of Virginia when she was so young that she did not have her full eyesight, was said to have in her champion blood. But I never got her lineage; her social background therefore remained unknown. But for beauty and gentleness she was all a man could desire. As a pup she was a pathetic, cuddly thing. And she too had all the setter's characteristics: sensitive, affectionate, eager to please, I hardly dared to speak a harsh word to her. Her manners and her behavior were those of a lady; and her manner of life always made Rip look like a bad boy. She was from the very start to the manor born, but Rip was a brusque and a brash rascal. Of course much of his roughness was evidence of plenty of strength and spirit; it just needed directing.

As to the age when a bird-dog should be "started," my idea is the younger the better. This business of reforming half-grown and mature dogs, maturing or matured in their wrong-headedness, has never appealed to me. I start a puppy along with nature's starting. By the time he is two months old, I think he should learn a thing or two. However, with me the first move is to discover whether the dog has a nose. This is absolutely vital. And it need not be presumed that every bird-dog puppy, even of the bluest blood, has a nose. Indeed, I have always found that there will always be the greatest difference in this respect among the puppies of the same litter. The nose



is IT. If a dog has it, you should be able to make something of a champion out of him. If he has it not, whatever his other qualifications, you might just as well not waste your time on him. But how is one to tell? It is easy.

Kill an English sparrow and suspend him against a tree, two feet off the ground. Then bring your puppy there and see if he will get wind of the bird. I sometimes start at three feet; then lower it if there is nothing doing at that height. Try dragging the bird around on the lawn, and watch with what surety and alacrity the pup unravels the trail. If once you can make certain that your dog has a nose, you need not worry about much else. In the case of Rip and Bonnie, I soon discovered that each had what is worth all other qualifications.

Then there is the business of gun-shyness. Some puppies are never shy; some are shy to a painful degree. But none need ever be shy. It is dangerous to delay overcoming this trait. I have seen some pitiful and pathetic wrecks of otherwise fine dogs whose owners tried to break them of this nervous fault when it was too late. The solution seems to be a matter of associating ideas. By the time a puppy is two months old, I never feed him without first giving a signal with a gun; first with blanks from a .22; then a .410; then a .16. And I never saw a pup so trained who did not resuond joyfully to the gun. And while he is still decidedly a pup, kill sparrows for him with the gun, getting him in this way to associate the gun with game.

If your puppy has a nose, and is not gun-shy, he is ready to be taken afield; and by that I mean that you can hunt with him *if he will point.* Now, here is what I might call the last critical question, and it is a mysterious one. Some dogs just have no point in them. I cannot explain this; but it is a fact. An instinct that is natural to their breed just happens to be left out. And I never saw a bird-dog that could be taught to point. I had a dog given me (and look out for grown bird-dogs that come to you as gifts) called Savannah Count. He had all the pedigree worth having. He had a nose. He was not gun-shy. Bold and aggressive, he was a noble sight in the field; but he never made a stand. Flushing quail or grouse, he would run them to the glimmering horizon. As a result, while I kept him, which wasn't long, I had hunting; but all of it was hunting for my dog. When I had caught him, I had done a day's work. Yet this dog was one of the most beautiful and highbred that I have ever seen. He just didn't have what it takes: he wouldn't point, and I didn't know how to go about teaching him. Of course, if a dog will stand, yet not hold, he can generally be taught to hold. But if he won't point, that's that. Get another dog.

Now you wonder how a man is going to tell whether that puppy of his is going to point. He can usually tell before the dog is half-grown. I try to tell by the time he is two or three months. With Bonnie and Rip, this was my procedure: I clipped a pigeon's wing; then every day, with conscientious regularity, I hid that pigeon in some deep grass in the

woods by my place. Then I would take each puppy casually near the place (a different location every day). At first, of course, winding him, they would forthwith plunge right into his bosom; but I admonished them to be more artistic in their performance. When one of them began to creep up, I used the word, "Steady!" Words of command to a dog are of extreme importance. I don't believe it makes any difference what word you use, but be sure to use the same word each day to convey the same idea. "Heed" and "Hi" used to be the great words for "Stop" and "Go." And the former, or a substitute for it, may be used at feeding-time to teach a dog to give more attention to his master's command than to his own strong desire to rush in,—whether it be at food or at wild game. A puppy broken on a few words will know their meaning, and probably obey them, as long as he lives. And it may be remarked that the reason why some bought dogs are strange and bewildered is that their new owners give them commands in what might just as well be a foreign tongue. If you buy a dog, find out the words to which he is used.

When I broke these pups, I was living in Southern Pennsylvania, just north of the Maryland line. Here is the northward extension of the great Shenandoah Valley; and it is good hunting country. Indeed, conditions are unusually favorable; for, while the valley itself, in a good season, is alive with quail, within two or three miles, in the foothills of the Alleghenies, one can find a good many ruffed grouse, and occasionally a wild turkey. Deer are about as plentiful as they are in any region of America. In the stubble fields and in the semi-wild pastures on the edges of the mountain, quail are abundant.

The first day of the hunting season approached, and I had a great question to solve: should I take Bonnie or Rip? I had no other dog. I was inclined to take the pointer; but I knew that it would be easier to leave him behind than to leave Bonnie. So it was that at daydawn on the first of November I left home with an infant fast asleep on the car-seat beside me. She didn't in the last know what it was all about, and I wondered if I did either.

It was a lovely autumn morning, frosty and still. I drove to a long briared gulley lying between two big wheat-stubble fields. Here I had already located two or three covies by their roosts. The birds were here. The day and the man were here. But was the dog here? When I parked the car, Bonnie was still asleep; and, believe it or not, I carried her for two hundred yards, fearing that she might get tired and chilly before we even got to the hunting ground.

As the sun cleared the mountains, I set my chubby burden down in the stubble that was about as tall as she was. I felt guilty, but determined to persist in my folly. Across the sloping field we went slowly, Bonnie finding some diversion in field mice. Finally, near the top of the hill, I walked into a big covey that had not yet begun to feed. When they rose, Bonnie fell flat. That might or might not be a good sign. The birds, about eighteen in number, fanned out and came to earth in long swamp grass in the open gulley. With a mature dog, such a place was ideal; but it was not so good for a baby.

I carried Bonnie down the hill. You know how birds will sometimes light in a thick place and then run out to its edges. That was what happened here. The first thing I knew Bonnie was lying down again. I looked at her carefully, and saw in her eyes that unmistakable dreamy light that comes to a good dog's eyes when he is pointing. She had her bird. Flushing it, I shot it, and made Bonnie find it. Now she began to be full of herself. She pointed another, this time almost standing on her

head. Back and forth we went along the edges of the gulley, collecting ten fine quail, the day's limit. Not all of these I shot over Bonnie's points, but most of them; and she found all of them for me. We were home shortly after breakfast time, and a proud lass was Bonnie; a little scornful, too, I think, of Rip. But perhaps that was just her feminine nature coming out.

From that eventful morning, Bonnie has been a made dog. When she was only four months old, I shot a ruffed grouse over her point. She didn't have to go to school or to college; she had learned in the kindergarten all that a good bird-dog needs to know.

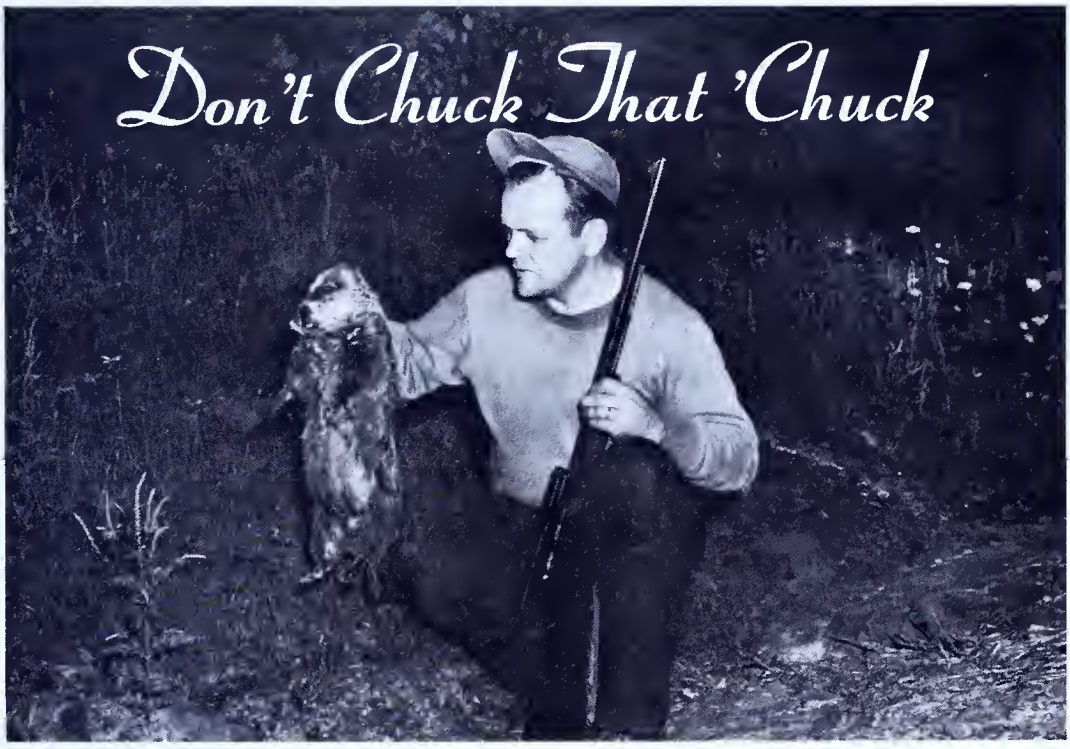
A few days after the first day, I took Rip to the same place. Bigger and stronger than Bonnie, he went to work like a man. Finding a good covey all by himself, he held it until I came up. When the birds flushed, he chased them merrily. Some trainers let a young dog chase birds. They say that he will soon learn in that way that he cannot catch them. But I always whip a puppy if he chases a bird. I believe not to object to such a habit is like advising a child to sow his wild oats. I have known a parent to do that, and he seemed to me to be a fool. Rip didn't particularly resent my punishment, and he became more careful. But he was wild: and perhaps it is the nature of the pointer to be less steady at first than the setter. He is more on edge. It has always seemed to me that, while a setter's chief aim in life is to please his master, a pointer's is to get the game. Rip and I muddled through that first morning, and got a few birds. But my nerves were jangled by the time we got through. But the next time he did better. And the next time I took both pups out.

There was some chance that Bonnie would revert to a frolicksome mood, and she did until the business began. Rip found a covey, and froze to a dead point. Bonnie rushed up, and I was afraid that she was either going to tackle him for a general roughhouse, or else would flush the birds. She did neither. Halting for a moment, she began a ghostlike stalk, a little ahead and to one side of Rip. She came to a stand six feet ahead of Rip, and was faced in a different direction. She had the birds. When they rose, both pups held, an evidence, I think, of a rivalry in finesse. If you want to make a champion of one dog, introduce a little element of jealousy. They are as human as that. Only use some sound common sense in getting your dog to understand in what superority consists.

Quite simply, and I fear ramblingly, I have told you of the way I broke these two puppies. Now grown, and past my teaching, they are my affectionate companions and my great providers of sport. I have had many other dogs, and may have more, but Bonnie and Rip pretty well illustrate, I think, what can be done with puppies that have the right qualifications. And let me repeat what they are: a fine and delicate nose; no gunshyness; the instinct to point. Now, there's that puppy of yours. Find out if he has IT. If he has, start him early.



Don't Chuck That 'Chuck



By Keith Schuyler

THERE are two fallacies regarding the woodchuck that are frequent topics of conversation. One holds that the old groundhog is a prognosticator of the weather in spring, and the other would lead you to believe that he isn't fit food for the table.

I won't argue the first point, although the weatherman most certainly will. But, on the second, I'll prove that it's wrong if you will drop around sometime when 'chucks are in season in Pennsylvania. The woodchuck *is* good eating.

No, he won't quite rate with roast pheasant or fried rabbit, but he deserves a place all his own on the menu.

Since the woodchuck is a pest of sorts when allowed to breed unmolested, few hunters have any compunctions over killing just for the sport of it. Some let them lie where they fall while others give them to the fellow down the street "who will eat anything."

That fellow down the street is equipped with the same gustatory sensibilities that came with your birth certificate, and he is having a good laugh and a good feed at your expense if you are one of those who chuck away your 'chuck. But, if you'll listen closely a minute, you can have the last laugh on him and your butcher as well.

Rather than trying to tell what some fellows do wrong, I'm just going to describe the procedure that I use to get the most out of my groundhog hunting. If you use it, you'll find the whistle pig provides good sport at the table as well as in the field.

First, if you can afford to be choosy, shoot for the little fellows and take them in early summer when they are about half grown. They will have less fat and at that time are apt to be more tender than the size of the one used in the accompanying illustrations. However, don't throw any of them away.

From the moment you shoot it, treat the 'chuck as you would any wild game. Remove the viscera at once. Although some prefer to hang



A razor-sharp paper knife helps keep the fat on the hide when skinning. Removing all appendages makes easier a tough task. This 'chuck was unusually fat.

the carcass for 24 hours or more before cleaning, I prefer to get the job done as soon as possible. Skinning it is a tough task at any time.

Whereas the skinner normally attempts to keep as much fat on the carcass as possible when pelting a furbearer, the person skinning a 'chuck wants to keep as much fat on the hide as possible. Although the fat does not have a disagreeable flavor, there is usually much more than you need.

There is a brownish patch under each foreleg which must be removed. This is the gland that imparts a strong taste to the flesh if allowed to remain. There is another at the small of the back which is sometimes difficult to find if the 'chuck is very fat. Some oldtimers remove the entire backbone in that area, and I follow this procedure to be on the safe side.

Wash the carcass well, remove excess fat, and then soak it overnight

The danger points! Glands must be removed from under each foreleg and at the small of back. Some hunters recommend removal of this entire section of the backbone.



in a strong solution of water, salt, vinegar and onion. Remove the carcass the next morning and scrub it clean.

As a guide and guarantee against any more wasted woodchucks, you might try one of the following recipes.

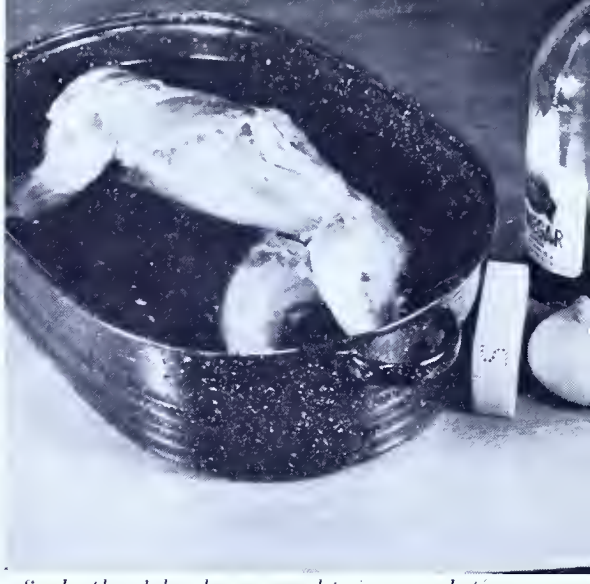
ROASTED

Parboil all but the very young animals first. Rub carcass with salt and pepper. Make stuffing of: 1½ cups boiling water, ½ cup butter or margarine, ½ cup minced onion, ¼ tsp. pepper, 1 tbsp. seasoning or powdered sage, 1½ tsp. salt, 2 tbsp. mustard, 2 tbsp. diced celery, 3 qts. lightly packed bread crumbs, 2 tbsp. parsley flakes. Combine water, butter and onion, simmer 5 minutes, then add remaining ingredients and mix.

Stuff animal and truss as with fowl. Put in roasting pan with bacon strips over carcass and pour one quart of water into pan. Roast covered for 2½ hours at 350° F.

FRICASSEED

Parboil all but the very young animals. Remove all fat and cut into pieces. Rub with salt and pepper and roll in flour. Fry in hot fat until brown. Add water, cover and simmer until tender.



Soak the 'chuck overnight in a solution of water, vinegar, salt and chopped onion.

STEWED

Parboil twenty minutes, drain and cover with fresh boiling water. Add sliced onions, ½ cup diced celery, cloves, salt and pepper. Cook until tender. Thicken gravy with flour to suit.

. . . *The End*

Here's the proof! When kids don't have to be coaxed, it must be good. And hot rolls, buttered broccoli, Harvard beets, creamed corn, tossed salad, baked potatoes and groundhog gravy make a good menu to compliment the piece de resistance.

Photo by Fred Schrader



Presenting . . .

A New Wild Waterfowl Management Area



At an impressive ceremony on June 25th, Governor John S. Fine broke ground for a new dam near Geneva and about five miles southeast of the town of Conneaut Lake. A 550-acre lake will be created here this summer on State Game Lands No. 213, in the Conneaut Marsh, Crawford County.

When completed, the new lake will be a fine waterfowl area and should produce excellent duck and goose hunting. The marsh, which in past years has often been dry and worthless from a waterfowl standpoint, will provide added opportunities for Pennsylvania's hunters and trappers. Two gates on the spillway will permit fluctuations in the water level, a management operation allowing opportunity to plant food for wild waterfowl at seasonal periods. The possibilities for muskrat habitat development are also described as good. Present plans call for a wildlife refuge to be established on part of the area.

State officials and distinguished guests who witnessed the start of this project, an important step forward in Pennsylvania's wildlife conservation program, included: Hon. E. L. Schmidt, Secretary of Highways; representatives of the Pennsylvania Federation of Sportsmen's Clubs; members of the Fish Commission; members of the State and National legislatures; and many interested sportsmen. Members of the Pennsylvania Game Commission who attended included: President John C. Herman, who served as master of ceremonies; H. L. Buchanan, Andrew C. Long, and Tom L. McDowell. Commissioner Buchanan served as general chairman for the groundbreaking ceremonies and was also instrumental in planning the entire project.

The new lake was made possible through the cooperation of the U. S. Fish & Wildlife Service, the Pennsylvania Department of Highways and the Game Commission. The federal Service has agreed this project qualifies under the Pittman-Robertson Act, permitting three-fourths of the expense of its development to come from funds provided by this legislation. Expenses of elevating the highway which will form the breastwork for the shallow lake will be shared jointly by the Game Commission and the Department of Highways.



State officials gathered to dedicate the new Conneaut Marsh waterfowl development area included, left to right: John C. Herman, Commission president; E. L. Schmidt, Secretary of Highways; Governor John S. Fine; Dr. Logan J. Bennett, Game Commision Executive Director; and Representative George A. Goodling.

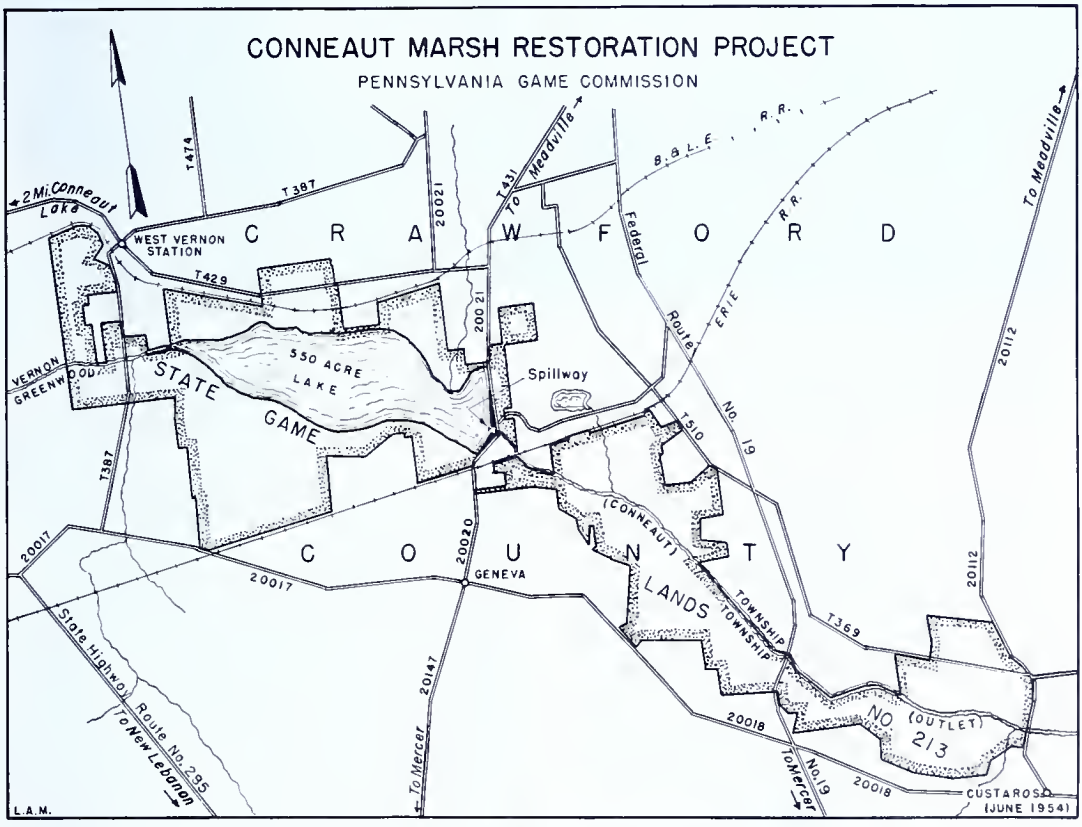


Photo by Reed McCaskey, Meadville Tribune

Governor Fine addressing state officials and distinguished guests during a luncheon prior to the ground-breaking ceremonies. In his speech, the Governor predicted the area will be a boon "to the people of Pennsylvania who can visit it to enjoy themselves and become refreshed and reinvigorated."



Susquehanna Shows the Way

AN AWARDS banquet, attended by some 400 people at Hop Bottom, Pa., the evening of April 8, 1954, climaxed almost a year of work by the Susquehanna County Federation on its conservation project.

Let's start back at the beginning when the late Lynn Rosenkrans, Conservation Education Assistant for the Northeast Division of the Pennsylvania Game Commission, sold Warren "Barney" Singer, President of the Susquehanna County Federation, on the idea. The idea was to start all the schools of the county, along with the parents, sportsmen, conservationists, and State and Federal conservation agencies, working on a common local conservation project. The project was to be sponsored by and carried out by the Susquehanna County Federation.

Barney and Lynn brought up the idea at the next Federation meeting and obtained full support from the officers and members of the County Federation Unit. A project committee, judging committee, awards committee, and banquet committee, were appointed. This was in July of 1953.

The conservation project consisted of having each boy and girl in the 7th, 8th and 9th grades in the county prepare a conservation poster for the contest, and each boy and girl in the 10th and 11th grades write a conservation essay. The project committee consisted of grade and high school principals and teachers, with Lynn Rosenkrans acting as adviser. This committee, headed by Wayne Jesse of Harford High School, set up the rules of each contest, and prepared an explanatory pamphlet which gave all the details. The Federation had the pamphlet printed in an attractive style. With the help of Linus Moore and Rosenkrans, plus the cooperation of the Susquehanna County Superintendent of Schools, each school in the county was visited, and the project was explained to teachers and pupils. Several copies of the pamphlet were left at each school. Science teachers, English teachers, Vo-Ag teachers, and Art teachers began preparing their eligible classes for the project. According to the rules each school could submit three essays and/or three posters to the Federation to be judged in the competition.

State and Federal conservation agencies were contacted by the Fed-

CONSERVATION
Essay
and
Poster
CONTEST



For the School Children
Of Susquehanna County

(Also Nicholson, Benton and Greenfield)

- 1954 -



Photo by R. Wood

The Lynn Rosenkrans Conservation Essay and Poster Trophy Cups were awarded by Donald T. Dinsmore (left), of the U. S. Soil Conservation Service, Accepting the cups for their schools were Martha Potter, essay winner, middle; and Donald Johnson, poster winner, right.

eration project committee, and by the individual schools, for material on conservation. Many parents became interested and helped search out conservation material and subject matter.

During this time, the Federation awards committee was busy arranging the financing of the awards. Each local Rod & Gun Club that has membership in the County Federation, along with the Susquehanna County Soil Conservation District, contributed funds to purchase and engrave the awards. In each the poster and essay contests, first place award was to be a good Wrist Watch; second place, a Flash Camera; third place, a Pen and Pencil Set. To the school having a first place winner in each contest was to go a handsome engraved trophy cup about 14 inches high.

By January 1954, the Federation had the project in full swing, and everybody who was asked to help cooperated. The school principals and teachers of Susquehanna County deserve special credit and thanks for the excellent job they did in obtaining participation of a great many students.

The judging committee appointed as judges Mrs. May Mather of New Milford, retired school teacher and art enthusiast; Mr. Francis Cope of Dimock, ardent forest conservationist; and Donald T. Dinsmore, Tunkhannock, Area Conservationist, Soil Conservation Service.

Then in February 1954, Lynn Rosenkrans was taken suddenly ill and died. Several people pitched in and carried on where Lynn had left off with his part in the project.

It was suggested to Federation President Barney Singer that the project be named a memorial in honor of Lynn Rosenkrans. This suggestion was taken up at a Federation meeting and met with unani-

mous approval. The project now bears the name, "The Lynn Rosenkrans Memorial Conservation Essay and Poster Contest." It has been established as an annual affair by the County Federation Unit. The annual trophy awards bear that inscription.

All schools but one in the county participated, and three eligible schools outside the county that have Susquehanna County students also participated. The small area of the non-participating school is not represented in the Federation. A total of 19 essays and 45 posters were received by the Federation for judging. The grade schools outnumbered the high schools; therefore the posters outnumbered the essays.

Both essays and posters covered the various fields of conservation. Some were on forest conservation, some were on soil conservation, some were on wildlife, some were on fish conservation, and some were on stream pollution. A few were on general conservation, bringing in the several phases.

Winners of the essay contest, and their individual awards, were as follows:

First—Martha Potter, Blue Ridge Joint School, Wrist Watch

Second—Mary Summers, Harford High School, Flash Camera

Third—Margaret Gretschel, Rush High School, Pen and Pencil Set

Winners in the poster contest, and their individual awards, were:

First—Donald Johnson, Clifford Township School, Wrist Watch

Second—Christine Koeb, Springville High School, Flash Camera

Third—Barbara Foley, Benton Township High School, Pen and Pencil Set

The program for the awards banquet was worked up and printed by the Hop Bottom High School as part of a training for the students. This work was supervised by Principal Omar Seals of that school.

All the ladies of Hop Bottom, Susquehanna County, turned out in force, and with the guiding help of Linus Moore of New Milford and Omar Seals, Principal of the Hop Bottom High School, put on a gala banquet, with turkey and all the fixings, for the some 400 people in attendance. Individual awards were made to the above winners. Martha Potter, winner of the essay contest, did an excellent job of reading her fine essay which is printed here.

Erosion Control by Means of Reforestation

Erosion is the wearing away of the soil by wind and water. Erosion control is needed to prevent further loss of our precious topsoil. Just how vital this is, is not as well known as it should be. It is an actual fact, that if the top eight inches were removed from the earth we would probably starve in a short period of time. To prevent this loss, soil conservation practices have been instituted. One of the most important of these practices is reforestation.

As our nation developed, large quantities of lumber and other forest products were needed. The inevitable result was rapid and complete devastation of our best stands of timber. Clean cutting of these timbered areas left them exposed to the danger of fire, and the people, not realizing this danger, made no effort to protect them. Rain, falling on the hard bare ground of the slopes left by the fire, ran off rapidly taking much of the soil with it. Disastrous floods followed, growing worse each year as more and more topsoil was removed. The inability of the soil to retain the water caused bad droughts and prevented any chance of the hills starting new cover. As the habitat of wildlife was removed, they too disappeared.

By replanting these areas, forest debris and humus will again be deposited on the ground with the result that the hard rains striking these areas will be slowed up and allowed to soak into the ground. Plants will thrive on this moist soil and in turn help to retain more moisture as it falls. This is a much more effective

method of flood control than the building of large dams. Dams are not only costly but will, in time, silt up. Covering the slopes with trees will provide a permanent and indestructible water storage.

Reforestation is an effective method of helping nature restore its natural cover. On areas where erosion has removed most of the topsoil or where deep gullies have occurred, many years would pass before nature could restore this cover. By reforestation, man can, in a few years, accomplish this result.

As soon as a forest cover has been established, nature begins the task of rebuilding the soil. In this, man has no economical method of aiding, with the result that it takes approximately a hundred years to build one inch of topsoil. This building, though it seems very slow, will continue as long as the forest cover remains.

Reforestation by stopping the rapid run-off prevents the carrying of large quantities of soil down into the valleys. This soil is in many cases deposited in the channels of streams and rivers. As the channels fill up, the danger of floods is greater and usually more severe. During these severe floods large quantities of soil are carried to the ocean and permanently lost.

Reforestation reduces and in some cases, entirely eliminates soil loss. By slowing up the run-off of the flood waters more water soaks into the soil, with the result that the water level in the ground is raised. The increase of our population and scientific advances in industry demands more water. Raising the water table is therefore a matter of vital importance.

The forest as a recreational facility does not affect our survival as a nation, but they are important to everyone. The forests provide beautiful scenery, a place to relax and rest, scenes to paint, wildlife to enjoy, biology to study, and many other pleasures. There are few people but what some time or other make use of the forests for a pleasure trip, and with our increased population the providing of sufficient facilities is becoming a problem.



Photo by R. Wood

Barbara Foley receives her third place award at the Susquehanna Federation Banquet.

The restoration of forests also provides a place for birds and animals, many of which cannot or will not exist except in the forests. Hunting, thus depends upon our restoration of a sufficient area of forest land. If the water is allowed to rush immediately off the slopes into the rivers and lakes, the smaller streams are dry for long periods of time. Such streams will not support fish. Forests slow up this run-off and keep a fairly constant level of water in the streams, providing places for fish to live and multiply.

Reforestation will provide many lasting benefits to man. It will lessen erosion, restore the needed top soil, increase fertility of soil, preserve our soil, reduce possibility of floods, provide refuge for birds and animals, raise the water table, provide relaxation, recreation facilities, and in time will provide much needed lumber and other forest products. This we owe to the coming generations. If we preserve our forests, we will guarantee the survival of our great nation, the United States.

After the individual awards were presented, the two trophy cup awards were presented, to become the property of the winning schools.

The cups were engraved as follows: "1954 Lynn Rosenkrans Memorial Conservation Essay Contest, Martha Potter, Blue Ridge Joint Schools, Presented by the Susquehanna County Unit of Federated Sportsmen."

"1954 Lynn Rosenkrans Memorial Conservation Poster Contest, Donald Johnson, Clifford Township School, Presented by the Susquehanna County Unit of Federated Sportsmen."

Judge Edward P. Little of Montrose was Toastmaster, and the musical entertainment was furnished by Fred Adolfson and family and Miss Joan Leslie and Miss Gail Moore, all of New Milford.

The Susquehanna County Federation believes it has started one of the most worthwhile types of conservation projects that a county Federation can undertake. Not only is it helping develop the desires of the school students to have a greater sense of responsibility toward conservation of natural resources, but by the very nature of the project, a great many people of the county other than just the sportsmen are developing an interest and a desire to help. With each student in the County actively working with conservation subjects each year, from the 7th grade through the 11th, on a competitive basis in addition to their regular school work, the young generation cannot help but develop a considerable knowledge of the need for natural resource conservation and the methods of obtaining it.

All About Pennsylvania Caves

During the past twenty years, nearly 200 caves have been discovered in the Keystone State, according to the book "Caves of Pennsylvania" just published by the National Speleological Society.

The result of a three-year study by scores of spelunkers under the direction of former State Geologist Ralph W. Stone, the new volume describes and locates 264 caves. More than ninety percent of these are "wild" caves—visited mostly by spelunkers, naturalists, photographers, and others but Pennsylvania boasts eleven caves which have been electrically lighted and opened to the public.

Folklore and legends of the caves of Central Pennsylvania have been recorded by Dr. Henry W. Shoemaker, Division of Folklore of the Pennsylvania Historical and Museum Commission. Several of the State's wild caves are world-renowned for discoveries of remains of saber-toothed tigers, mammoths, tapirs, ground sloths and other prehistoric creatures, extinct for at least 10,000 years.

Copies of "Caves of Pennsylvania" may be consulted in many public libraries in Pennsylvania or information concerning the book may be secured from Dr. Ralph W. Stone, 3115 N. Front Street, Harrisburg. The book was edited by Jerome M. Ludlow, a vice-president of the National Speleological Society and an employee of the U. S. Geological Survey at Trenton, N. J.



The oldest painting of an Indian town in the eastern United States, from John White's original Virginia watercolor of about 1588 in the British Museum.

A Brief History Of the Indian Hunter

PART III

By John Witthoft

IN EARLY Woodland times slightly before 500 B. C., Indians lived in single households along our rivers, each family in a single farmstead surrounded by its fields. We know very little of these settlements because each one was a mere single hut, and only a few of these hut-sites have been excavated. In Ohio and other places, they frequently raised burial-mounds over these houses, so that the Adena Culture of that area is much better-known. In Pennsylvania, the houses of this period were sometimes dug below ground level, probably for greater warmth in the winter. There are few relics found at sites of this age, mainly because the Indians were scattered in so many tiny family groups, and each site represents so few people.

The crop-plants of this period have not yet been found in Pennsylvania

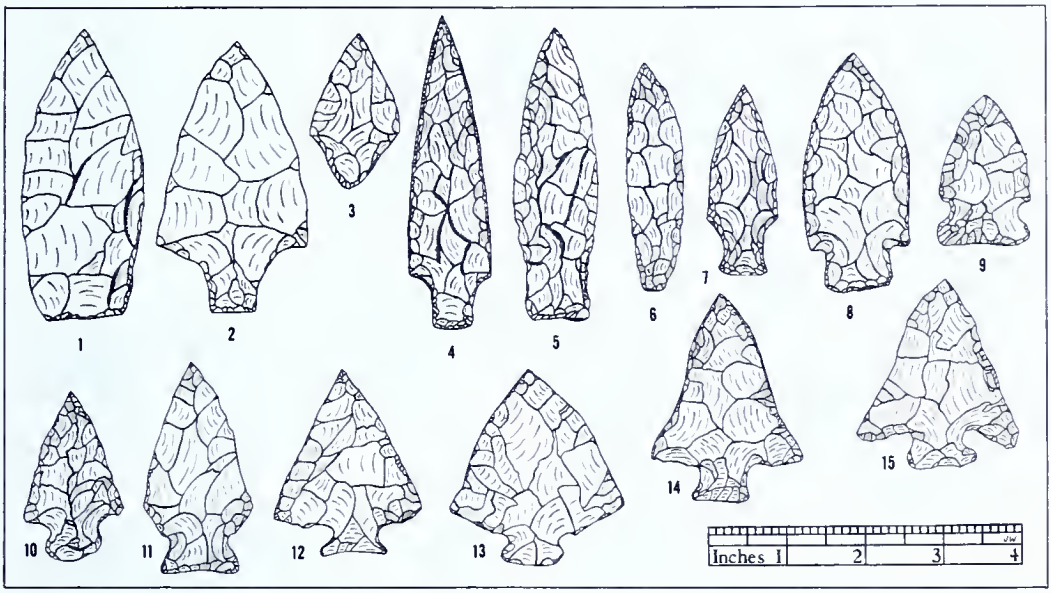
sites, but their charred remains have been found in Ohio sites of the same age, and dried materials are known from Kentucky rock-shelters which were occupied at the same time. The most important plant was the cultivated sunflower, represented by seeds and heads which closely resemble the so-called Russian Sunflowers of our seed catalogs. The sunflower is of interest for several reasons. It is an important crop plant, one of the best food-oil sources of the plant world, and is an extremely rich and nutritious food. It is also the only crop plant of modern commerce which had its origin in the eastern United States, which was bred from a wild plant of little utility within this region. Corn and beans seem to have been totally unknown to our earlier farmers, but a number of other grain-plants of local botanical origin and of types no longer grown have been found in Kentucky sites of Early Woodland age. Most of these are pigweeds and Amaranths, with seeds many times larger than wild forms. These may have been also grown for a time by later Indians, but the seed was long ago lost. The sunflowers, on the contrary, were grown by all later Indians; all of the modern varieties of sunflower which we grow, and which we know as weeds in the west, originated in seed-stocks which our ancestors got from Indians of the eastern United States. Farming in early times in the United States seems to have been of local origin, with cultivated plant varieties developed from local wild plants. Later, more productive plants, such as maize and beans, were brought in from tropical America and came to largely replace the old local crops.

Apparently tobacco was also grown in Early Woodland times, for it has been found in one Kentucky rock shelter with objects of this age, and large tubular pipes of stone are among the commonplace items of the Adena culture of Ohio and Pennsylvania and New York sites of the same age. These tubes, generally made of stone from Portsmouth, Ohio, are probably the world's oldest smoking pipes. The tobacco used in them was not the tobacco we use, which came from central America, but a local species which is still grown by a few Indian communities. This tobacco of our area, *Nicotiana rustica,* is not a wild plant, but is known only in cultivation and its wild ancestor has never been identified.

Other tools of Early Woodland times in Pennsylvania include narrow stemmed spearpoints, adze and hatchet blades, bar-weights used on the spearthrower (many of them representing birds), and pottery formed crudely from clay and fired barely hard enough to cook in. The pots of this period were round-bottomed, bag-shaped vessels, in Pennsylvania; flower-pot shaped vessels with a flat base were made in Ohio. Apparently the appearance of cooking vessels during Transitional times had represented the introduction of new cooking methods, and in all later times, Indians seemed inclined to boil most of their foods into soups and stews.

MIDDLE WOODLAND FARMERS

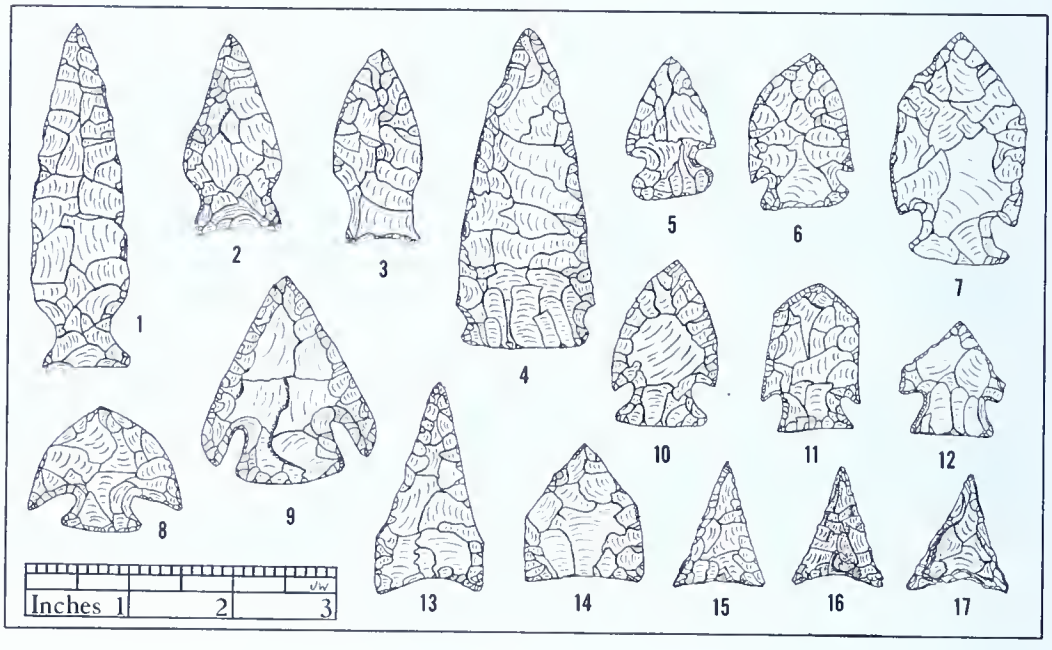
In somewhat later times, after 500 B. C., the general patterns of Indian life continued much as they had been, except that many minor changes and improvements in the arts of life can be detected. Spearpoints are smaller and more finely chipped, and are generally very delicately notched and often sharply barbed. Spearthrower weights are not very evident in most sites, and disappear completely during Middle Woodland times; at the same time, small flint points of simple forms first appear, and we believe that the bow and arrow first appeared on our scene during these times. The same farmhouse style of settlement seems to have continued, at least in Pennsylvania, and sites



Susquehanna Valley spearpoints of the Early Archaic Period (1-3), Late Archaic Period (4-10) and Transitional Period (11-15), drawn to show chipping patterns.

are difficult to locate and study. Charred corn has been found in sites of this period in other states, but it is so poorly in evidence that it could not yet have attained the primary importance that it held as a grain in later times. Gourds are first identified with certainty in this period, although they were probably also grown earlier. Pottery fragments are much more numerous than in earlier sites, and pipes are quite as abundant, but occur in several shapes. They were made both from pottery and stone, and are of elbow forms and other more elaborate patterns.

With the close of Middle Woodland times, sometime between 300 A. D. and 700 A. D., Indian life in our area was much like that of the last surviving Indians, except that further effects of new resources were to be seen. Populations were not yet of large size, and town life had not begun, although maize, beans, and pumpkins, the great plants of local Indian agriculture, were being grown. The bow had replaced earlier hunting tools, a sedentary house-life was well-established, hunting had become a subsidiary part of the economy, and the seeds of a very different sort of civilization than that of the hunter had been planted. In the Illinois Valley, large village-sites of this period mark the spots where fairly dense town-communities were settled on rich land. In the Ohio and Sciota, communities of the same age were little hamlets, by no means as sizable as those down-river. In Pennsylvania, few sites of Middle Woodland times seem to represent the occupants of more than two or three houses, and our Indians were country cousins to peoples of the Mississippi Valley.



Susquehanna Valley spearpoints of the Early Woodland Period (1 - 3) and Middle Woodland Period (4 - 14), and arrowpoints of the Late Woodland Period (15 - 17).

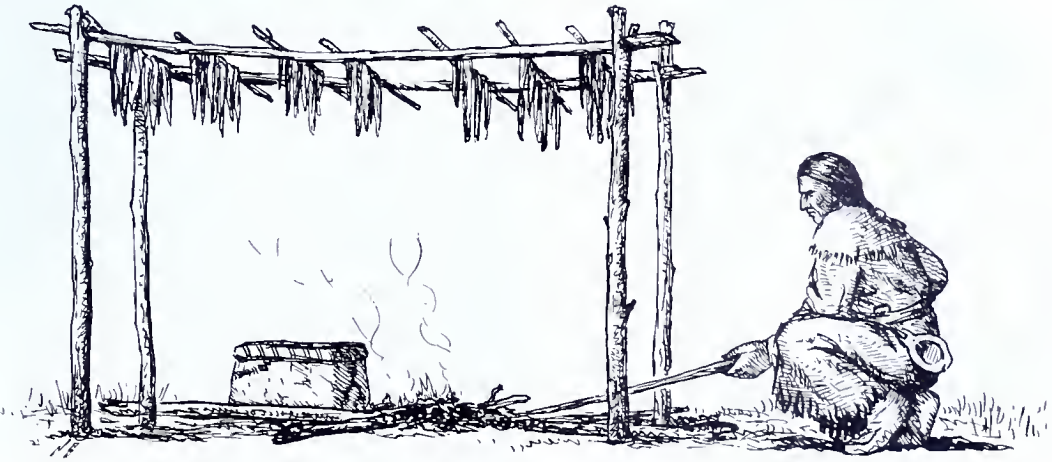
FARMING VILLAGES OF THE LATE WOODLAND PERIOD

Sites of the Late Woodland Period, which was the last stage proceeding European settlement, are everywhere in the East and Plains marked by an abundance of pottery fragments and by having only one shape of stone arrowhead, a simple small triangle without notches or stem. The bow had completely replaced the spear-thrower, and it is very likely that only the small triangular arrowhead was ever used with the bow in our area, and that all other shapes had had some other use. The only chopping tools were simple celts and adzes. Scrapers and planing tools are crudely beveled chips of flint. Knives are leaf-shaped chipped flint forms (the point was set in the handle, and the round base was the cutting edge.) Pipes were quite abundant, and occurred in a huge variety of forms in stone, pottery, antler, and wood. Hoes were sometimes chipped from shale, sometimes shaped from the deer shoulder-blade or a slice of elk antler. Netsinkers, made by notching the side edges of a thick pebble, hammerstones, anvil stones, grinding slabs, and pebbles with pitted sides (of unknown use) are very common. Some sites also have awls, beads, needles, and similar tools cut from bone. Except for the tools which I have listed, almost no other kinds of relics were used at all in this period; Late Woodland sites lack almost every type of tool that the average person thinks of as an Indian relic. The vast majority of the relics from our fields are much more ancient, and in fact most of them date from the Archaic Epoch.

Almost all Late Woodland sites are on river flats, generally on

slightly elevated spots, but almost always on very low ground. There are exceptions in southwestern Pennsylvania and some other areas, but these are usually in regions of peculiar topography. Most of the sites represent small hamlets, probably made up of a half-dozen houses clustered on a high spot in the middle of the Indian fields, and usually very close to the river bank. Farm crops were grown in large quantities, and we find charred maize and beans, and sometimes pumpkin fragments, in practically every Late Woodland site where we dig. It is almost impossible to miss the charred corn in sites of this age, whereas it can scarcely be found in earlier sites. We also invariably find bones of deer, bear, turkey, wildfowl, small animals, dogs, and the shells of river mussels in these sites; animal foods do not appear to have had nearly the importance of cultivated plant foods in this period, however, and arrowpoints are not abundant as compared to the frequence of spearpoints in earlier sites.

Houses in this period were round or oval structures, made by driving posts into the ground for joists, framing rafters over them, and covering the whole structure with barksheets or mats in shingle-fashion. Very few of these settlements were fortified by a ring-palisade of logs driven into the ground, but such town-walls sometimes occur as evidence of warfare. By Late Woodland times, Pennsylvania Indians had made vast gains in population, economy, and security over that known to their forefathers in ancient times of hunting economy. However, they were still rustic provincials compared to their relatives in the Mississippi Valley, where the same processes of increased food-production and growth of population had progressed much further. In fact, even in Ontario and New York, Indian communities of much larger size and more intensive agriculture were ordinary at this time. In the Ohio and Illinois valleys, and in southern Ontario, big peasant villages of forty or fifty houses, occupied by perhaps five hundred persons, and often fortified, were surrounded by hundreds of acres of tilled ground. On the Mississippi, huge walled cities, some of them covering more than sixty acres, were built on the huge stoneless river bottoms, surrounded by vast expanses of cornfields and gardens. We know of one such site in Indiana, one in Illinois, and several in Missouri, but the really notable examples are in Arkansas and nearby states, in the valleys of the Mississippi and the Red. Here peoples lived a stable urban life, with huge crop production, vast fisheries, almost no hunting, and sporadic warfare.





There Were 40 Little Pigs

McKEAN COUNTY—On May 21, I received a call from a Mr. Johnson, R. D., Bradford, that a bear was coming down to his farm and eating his pig feed. He stated that he did not care how much feed he ate so long as he left his little pigs alone. He had 40 little ones, also a number of shoats. The bear would climb up the gate post and go in for the feed, so Mr. Johnson put a sign on the gate. It read: "Mr. Bear, there are sheep and lambs up the road one-half mile. They are better eating than my little pigs." We set the trap and the next morning we found that he liked honey better than pig feed. While we were getting ready to put the trap on a truck, Mr. Johnson walked up to talk to the bear. The bear made one lunge and sprayed Mr. Johnson with froth. The froth and the big woof scared Mr. Johnson. He grabbed hold of his pants, walked back some 20 feet looked over his shoulder, and said, "Whoever said I had heart trouble doesn't know what they are talking about." We released the bear on Game Lands No. 30. Hope he doesn't bother Mr. Johnson anymore. —District Game Protector William J. Carpenter, Mt. Jewett.



Almost A Deer Per Day

SUSQUEHANNA COUNTY—Of the fourteen deer killed on the railroad and highways in my district during the month of May, eight were doe. Two were without fawns, one had one fawn and the remaining five were carrying twin fawns. Woodchuck hunters shot two deer, dogs killed another and one was found dead of unknown causes. Counting the unborn fawns, 29 deer which the hunter will never have an opportunity to shoot at were removed from my district alone in a 31 day period.—District Game Protector Donald G. Day, Susquehanna.

Wildlife Paradise

LUZERNE COUNTY—A trip around a portion of an edge cutting on Farm Game Project No. 178 in Wyoming County on May 27, in company with P-R Leader Roy Trexler and Game Protector Richard Roth, revealed the extent of food producing shrubs and vines which will grow if the environment is right. A total of 17 different species were counted, either in blossom or begining to fruit. Coupled with the dense cover provided by the felled tree tops and sprout growth and the food provided by the adjacent clover fields, this area is a wildlife paradise.—District Game Protector Nicholas M. Ruha, Forty Fort.



Game Chicken

LAWRENCE COUNTY—A Lawrence County "Game Chicken" left its headquarters for a few days during the first part of May and strolled to parts unknown. When the part game chicken returned it had a clutch of young pheasants with it which she no doubt had forcefully taken over and finished hatching. She is in no mood to let the original mother or anyone else get too close to her adopted young. No doubt she chased a hen pheasant from her nest and finished the hatch for herself.—District Game Protector Calvin A. Hooper, Jr., New Castle.

Battling Beaver

FULTON COUNTY—I received a call on the morning of May 5, stating that a beaver was blocking traffic on Route 30, one mile east of McConnellsburg. Upon arriving, I saw a crowd of people clustered around a beaver of perhaps forty pounds. Our efforts to drive him from the road were unsuccessful. If there was any driving to do; he'd do it. I snared him behind the front legs and put him in my truck. I transported him to State Game Lands No. 53, where there is an established beaver colony. I have had dogs, raccoons and fawns rearrange my trunk at various times, but this chap topped them all. The floor mat, spare tire, wiring and half my earthly possessions were heaped up in the form of a beaver house.—District Game Protector Carl, Jarrett, McConnellsburg.

Motherly Instinct

SCHUYLKILL COUNTY—I have received many calls to perform unorthodox methods of protecting wildlife; however, the most recent one topped them all. A lady called and asked me to stop in to see her that it was urgent. I stopped the same day to check the call and a very sincere and annoyed housewife asked me what I could do to help keep a robin who was setting on a nest from becoming wet. At this time, it was raining very hard. I explained to her that the robin was careful to protect her nest and that it was not necessary to take precautions to protect her. She replied that I should do something to help her, even if it was some sort of an umbrella to keep the rain off the robin and her nest. She as much as implied that since it was my duty that I should hold the umbrella if necessary. The following week the robins had left the nest.—District Game Protector Billy Drasher, Tamaqua.





Ruling the Roost

WESTMORELAND COUNTY—While releasing banded ducklings on the Loyalhanna Dam, I noticed a large bird about 200 yards above me on the shore. It looked like a Canadian goose but after a closer look, I decided it couldn't be a goose as its head and neck weren't shaped right. I walked toward it, and since it made no effort to fly, I decided that it was a tame duck which had wandered away. When I got to it I saw that it was a tame waterfowl, probably a muskovy. When it saw the ducklings in the water, it swam toward them and scared them out onto the shore. I chased them back and the big duck scared them onto the shore again. After this happened several times, I was beginning to get a little mad at the big duck and wondered how it would look on the dinner table. After being pelted with sticks and stones for a while, the duck decided to go somewhere else and swam across the dam.—District Game Protector D. W. Heacock, Irwin.

Dangerous Center of Attraction

CENTRE COUNTY—I was called to Spring Township on May 11, concerning a bear and cubs stopping traffic. Traffic was really tied up when I arrived, for I found cars parked on both sides of the road and also on both lanes. One cub had climbed about 35 feet up a tree and was over the edge of the road. A second cub and its mother were on the side of the wooded hill, about 40 yards away. The mother bear just laid there unconcerned as the second cub played around her. People, about 60 in number when I was there, were so concerned with the rare sight, that they were standing on the road and had parker or stopped their cars on the road. This portion of the road was hidden from motorists coming down the steep mountain on Route 53, and several accidents were barely averted. —District Game Protector Charles M. Laird, Milesburg.

Human Crow?

HUNTINGDON COUNTY—Are crows human? One day this month Deputy Webster told me about seeing a crow flying across the road directly in front of his car, near Lock Haven. The interesting thing about the crow was that it was carrying in its beak an empty ice cream cone as if on its way back for a refill at the nearest ice cream stand.—District Game Protector Dean Lesnett, Huntingdon.



Dooming the Deer Future

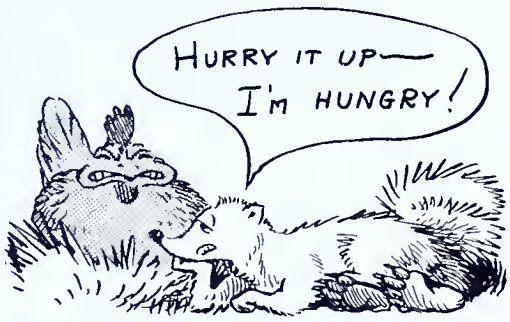
LACKAWANNA COUNTY—A good example of the possible increase in the deer herd where feed conditions are no problem is of the five doe deer killed accidentally in this district up to May 24, 1954. These five doe were carrying a total of eleven fawns. One doe killed on May 10, was carrying three fawns. The sexes of these fawns were even in each instance, except the triplets, which were two buck and one doe.—District Game Protector Philip S. Sloan, Dalton.

Appropriate Maternity Ward

LUZERNE COUNTY—One mother rabbit chose the front lawn of the Red Cross Headquarters in central city Wilkes-Barre for her maternity ward. The caretaker found the nest after he had mowed over it with the power mower within twenty feet of the front porch and the walk leading into the building. After being notified of the finding, I removed the family of seven young rabbits, as there was no cover left for the protection of them. They are being cared for until they are big enough to care for themselves.—District Game Protector George A. Dieffenderfer, Wyoming.

Grilled Groundhog

LYCOMING COUNTY—Recently while talking with a fisherman, Mr. Edward Grove, he related the following incident to me: Out fishing during the beginning of trout season he returned to his car and tried to start it. He noticed that it did not run right and finally it stalled. He got out and raised the hood and found a groundhog between the fan and the radiator. It had been cut pretty bad back of the head. Apparently when he approached the car he frightened the groundhog which ran under the hood.—District Game Protector Paul A. Ranck, Williamsport.



Some Skunks Never Satisfied

CHESTER COUNTY—On May 25, while releasing pheasants with Deputy G. Roberts on Farm Game Project No. 126, I contacted cooperator William Cornog, Uwchland, and he related an unusual experience he had witnessed several weeks ago, which involved a white skunk that had some black markings on it. It was discovered by him one morning while he was collecting his eggs. He stated that he lifted the lid from one of his boxes where the hens lay their eggs and to his amazement discovered the skunk lying along side of the hen which was setting on the nest, and several egg shells lying along side of the skunk. The skunk seemed very contented, but needless to say that skunks contentedness was short lived, after Mr. Cornog ran to the house and got his 22 Hornet.—District Game Protector Edward J. Fasching, Downingtown.

Can't Bear TV

LYCOMING COUNTY—Have had a new type of bear damage the past month. The Loyalsock TV Company has a tower on the Allegheny Mountain where there is a large box containing several power boosters for TV, which are connected to electric current and have a humming sound. The bear must have thought there were bees in the box, as he upset the box and tore off the tar paper cover. No harm was done to the equipment. —District Game Protector Levi R. Whippo, Williamsport.



Federal Aid in Wildlife Restoration — Southcentral Pennsylvania

The following article, sixth and last in a series of six, is the result of combined effort and teamwork. Field data and reports were compiled by Francis E. Jenkins, Land Utilization Assistant, and Gilbert L. Bowman, Pittman-Robertson Area Leader, of the Southcentral Division. The article was prepared for publication by Division of Land Utilization personnel at Harrisburg. Photos by Commission photographers.

FEDERAL Aid in Wildlife Restoration was inaugurated as a program on July 1, 1938. Under this legislation, known as the Pittman-Robertson Act, Wildlife Research and Restoration Projects are approved in various states, and funds provided to finance seventy-five percent of the costs. (Expenditures for wildlife protection, general departmental administration, propagation and stocking of game are not allowable under terms of the Act.) Programs are financed from federal taxes imposed on sale of firearms and ammunition. Each state receives a proportionate amount of this fund each year, dependent upon number of licenses sold and the state acreage compared to the whole of United States.

From 1938 to 1947 receipts from these excise taxes were limited and projects were confined largely to purchase of hunting lands and research problems.

In 1948 the Pennsylvania Cooperative Farm Game Program was expanded under terms of a Pittman-Robertson project, approved to lease, establish and develop new areas. Since 1949 development of State Game Lands and other leased areas has also been partly financed with these federal funds. All activities receive prior approval and periodic inspection by personnel of the United States Fish and Wildlife Service.

This article is written to acquaint interested sportsmen and conservationists with the use of Federal Aid

monies. It covers accomplishments in Wildlife Restoration throughout Southcentral Pennsylvania, which includes Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry and Snyder Counties.

Project areas within the Southcentral Administrative Division of the Pennsylvania Game Commission, include 109,250 acres (slightly more than twelve percent) of the 902,179 acres of State Game Lands; 146,353 acres (over fourteen percent) of the 1,048,145 total acres of Cooperative Farm Game Projects; and 29,524 acres (more than twenty-six percent) of the 111,819 total acres of other leased projects throughout the state.

Federal Aid funds have been utilized in the acquisition of many State Game Lands. In the Southcentral Division, acreage in various counties were purchased as follows:

County	*Acreages*
Bedford	2,929.1
Blair	7,450.9
Cumberland	837.0
Fulton	117.0
Huntingdon	1,034.0
Perry	704.3
Snyder	700.7
Total	13,773.0

These tracts of land were inspected and approved by employes of the United States Fish and Wildlife Service.

Practically all State Game Lands in this division include at least one old farm with cropland. These field areas were improved for wildlife by planting grains and seeding clovers under proper crop rotations, mowing sod to provide succulent grass and clover growth, cutting large trees along woodland borders to stimulate growth and fruiting of game food producing shrubs and vines growing on the site, planting steep slopes and rough field areas with evergreen trees and hedgerows with shrubs that are beneficial to wildlife. Fruit trees in old orchards and along field borders were released from competition by cutting surrounding trees, and then pruned to increase fruiting capacity. Both forest and farm game species benefit from these practices.

For many decades Southcentral Pennsylvania was considered the Wild Turkey Range of Pennsylvania. Although these game birds are now hunted and killed in many other sections of the state, a normal kill is still made in this division. Since wild turkeys are an important upland game species, much of the development work on many State Game

Marginal farms on State Game Lands become productive after proper conservation practices are applied. Small game receives a combination of cover and farm crops.





Plantings of multiflora rose and other shrubs improve game food and cover along field areas.

Lands was planned and executed to improve their range. Openings were created on wooded tracts, food strips of corn, buckwheat and other grains were planted, succulent greens provided by mowing clover strips, and clumps of game food producing shrubs and vines were released and fruiting improved by felling competitive tree growth. Deer, squirrels and other forest game utilized the food and cover provided by these operations.

The Rabbit Farm Program was extended into Blair and Perry Counties. Project personnel planted thousands of evergreen tree and shrub seedlings to provide cover, felled overshadowing trees along woodland borders, fertilized, limed and mowed strips along field edges to stimulate succulent clover growth, and released and pruned apple trees to establish brush piles and provide better food and cover conditions for all wildlife. The improvement in game habitat has justified this project expenditure on selected areas.

Local farmers that share-crop State Game Lands have played an important part in developing these areas. Cooperating with project personnel they have assisted in reclaiming old fields, and through strip cropping and proper rotations are improving the soil and providing food and cover for wildlife. The bulk of this share-cropping activity may be found on lands in Cumberland, Bedford, Fulton and Snyder Counties.

Other areas, in addition to the Rabbit Farms, include Propagation Areas, Auxiliary Refuges and refuges on State Forest land. Development on these sites was limited due to ownership. However, where conditions were satisfactory, project personnel applied accepted wildlife practices.

Leasing, mapping, establishing and developing of the Cooperative Farm Game Projects is partly financed with Federal Aid Funds. The program involves the leasing of farms from landowners under a five-year agreement. In return for the privilege of keeping the farm open to public hunting, pro-

(Continued on Page 35)

STATE GAME LANDS—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS

January 1, 1949 to December 31, 1953 SOUTHCENTRAL DIVISION

County	Food Strips			Equipment	Seedlings		Forest Cuttings			Fruit Trees	
		Planted to	Seeded to	Maintained	Roads			Border-Edge			
	Cleared Acres	Grains Acres	Clovers Acres	in Sod Acres	Serviced Miles	Evergreens No.	Others No.	Release Acres	Width* Ft.	Length Ft.	Released No.	Pruned No.
Adams	....	....	....	....	...	.....	.....	....	..	.....	....	....
Bedford	127.3	1,033.5	195.3	636.8	94.9	84,700	150,445	115.9	35	62,278	5,337	3,049
Blair	86.0	267.9	127.1	283.3	27.6	26,100	94,866	28.0	30	18,250	273	621
Cumberland	131.6	890.4	387.0	247.0	.8	33,550	95,688	81.3	30	7,500	38	458
Franklin	60.1	35.1	2.0	45.6	4.0	3,700	33,790	7.0	35	2,100	....	176
Fulton	138.2	523.1	133.5	365.0	35.8	3,500	65,693	32.0	46	23,380	3,668	3,353
Huntingdon	74.4	241.7	109.7	305.6	18.0	7,061	27,790	53.5	30	17,157	393	686
Juniata	34.5	224.5	33.0	119.5	3.8	4,900	6,175	6.0	10	1,200	42	232
Mifflin	27.0	77.0	35.3	114.0	2.3	6,500	9,645	67.1	..	....	1,424	3,672
Perry	7.0	31.8	9.5	19.3	...	500	3,500	2.0	25	1,000	100	25
Snyder	181.3	1,339.0	640.0	948.5	13.9	13,400	164,750	38.5	41	22,874	3,068	8,464
Totals	867.4	4,664.0	1,672.4	3,084.6	201.1	183,911	652,342	431.3	31*	155,739	14,343	20,736

MISCELLANEOUS

Blair ..... Constructed one pond or pothole—1/8 acre—S.G.L. No. 118.

Cumberland ... 26.5 acres of standing grain left for Wildlife by share cropper.

Fulton ..... 2½ bushels Asiatic Chestnut Seed collected.

Huntingdon .... Planted 2500 square feet nursery beds.

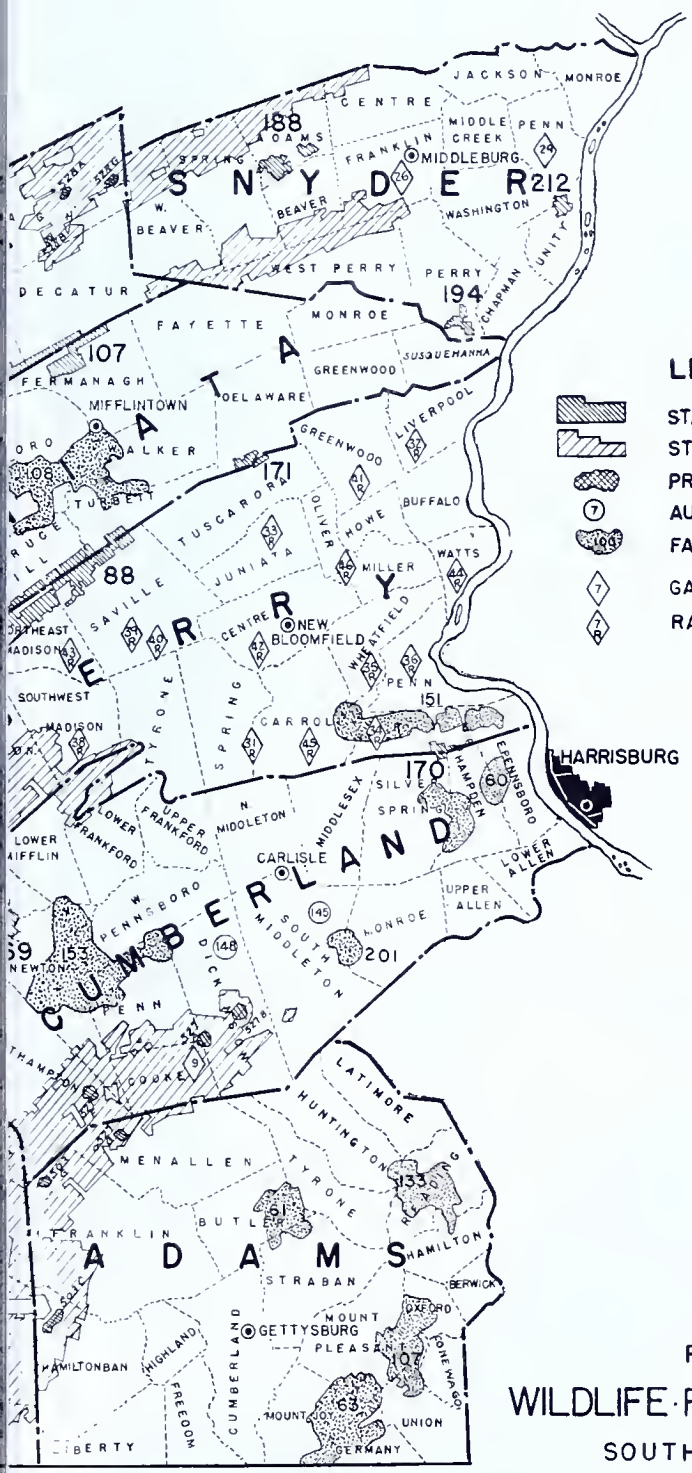
Mifflin ..... 60 pounds shrub seed collected for nursery.

Snyder ..... 10 bushels Chestnut and 205 pounds of shrub seed collected.

* Average.

Note: During the period 18.6 miles of equipment roads were constructed.
Thousands of bushels of grain in food strips were left standing for wildlife.
Surplus grain was harvested each year and distributed for winter feeding.
Seedlings grown in small Game Land nurseries were planted by project personnel or distributed to other areas of the State for use in the Restoration Program.


BLAIR
BEDFORD
HUNTINGDON
FULTON
FRANK
ALTOONA
BEDFORD
HUNTINGDON
McCONNELLSBURG
SNYDER
ANTIS
LOGAN
FRANKLIN
GREENFIELD
ALLEGHENY
WOODBURY
JUNIATA
FREEDOM
HUSTON
LINCOLN
NORTH WOODBURY
KIMMEL
BLOOMFIELD
WEST ST CLAIR
EAST ST CLAIR
KING
NAPIER
HOPEWELL
BROAD TOP
CARBON
PENN
WALKER
PORTER
CATHERINE
MORRIS
SPRUCE CREEK
TODD
CROMWELL
TELL
CLAY
SPRINGFIELD
DUBLIN
TAYLOR
WELLS
WEST PROVIDENCE
EAST PROVIDENCE
HARRISON
BEDFORD SPRINGS
CUMBERLAND VALLEY
LONDONDERRY
LICKING CREEK
BRUSH CREEK
BELFAST
AYR
PETERS
HAMILTON
ST THOMAS
MONROE
UNION
BETHEL
THOMPSON
WARREN
MONTGOMERY
158
131
109
10
166
112
118
198
143
147
26
71
67
99
41
73
164
121
73
81
76
104
48
97
65
53
49
128
124



LEGEND

- STATE GAME LANDS
- STATE FORESTS
- PRIMARY STATE GAME REFUGES
- (7) AUXILIARY STATE GAME REFUGES
- FARM-GAME PROJECTS
- GAME PROPAGATION AREA (GENERAL)
- RABBIT PROPAGATION AREA



KEY MAP

PENNSYLVANIA
WILDLIFE·RESTORATION·AREAS

SOUTH CENTRAL DIVISION

PENNSYLVANIA GAME COMMISSION

Scale 0 — 6 Miles

August 1954

L.A.M.

COOPERATIVE FARM-GAME PROJECT PROGRAM—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS

January 1, 1948 to December 31, 1953 SOUTHCENTRAL DIVISION

County	Leased		Safety Zones Established Dismantled	Refuges Established Maintained	Food Strips and Nesting Cover		Contour Strips Acres	Seedlings Planted			Wildlife Borders Developed Lin.Ft.Cut
	Farms	Acres			Strips	Acres		Coniferous	Multiflora Rose	Other Species	
Adams	247	27,055	1,041	17	151	38	8	20,100	10,550	340	18,000
Bedford	136	14,688	801	4	39	21	....	38,000	13,500	....	1,033
Blair	248	26,262	1,442	8	122	72	71	106,400	29,500	6,860	4,855
Cumberland	266	30,622	1,113	9	46	23	27	44,400	34,900	4,380	900
Franklin	128	18,017	538	12	36	38	....	27,400	57,350	9,885	....
Juniata	48	5,851	202	8	47	26	9	6,600	15,000	1,000	1,400
Perry	195	17,089	648	...	41	23	76	26,500	26,900	7,500	19,930
Totals	1,268	139,584	5,785†	58*	482	241	191	269,400	187,700	29,965	46,118

* All Refuges are maintained the entire year.
† All Safety Zones are erected prior to the beginning and dismantled after close of the Hunting Season.

OTHER LEASED AREAS—(Propagation Areas—Rabbit Farms, etc.)—ACCOMPLISHMENTS WITH PITTMAN-ROBERTSON FUNDS

January 1, 1949 to December 31, 1953 SOUTHCENTRAL DIVISION

County	Food Strips						Seedlings		Forest Cuttings			Fruit Trees	
	Planted to		Seeded to	Maintained	Plots					Border-Edge			
	Cleared Acres	Grains Acres	Clovers Acres	in Sod Acres	Purchased No.	Acres	Evergreens No.	Others No.	Release Acres	Width* Ft.	Length Ft.	Released No.	Pruned No.
Adams	....	....	....	....	....	....	....	....	7.5	....	....	....	....
Bedford	....	21.7	4.8	....	4	2.5	800	100	....	....	....	....	55
Blair	1.8	6.5	....	26.0	6	4.0	112,450	38,750	4.5	25	3,900	312	307
Cumberland	....	2.0	....	....	2	1.3	....	....	9.7	....	....	....	....
Huntingdon	....	21.3	7.8	11.5	4	1.1	....	....	....	....	....	....	....
Mifflin	....	....	....	....	....	....	....	....	...	25	300	....	....
Perry	....	32.0	20.0	2.0	....	....	44,000	40,800	....	30	8,500	....	76
Snyder	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	1.8	83.5	32.6	39.5	16	8.9	157,250	79,650	21.7	27*	12,700	312	438

* Average.

(Continued from Page 30)

visions are made to protect an area within 150 yards of their buildings by posting with safety zone signs and giving the necessary protection. Food and cover for wildlife are improved on these farms with the cooperation and permission of the landowners.

The advantage and success of these Cooperative Farm Game Projects are widely acknowledged. Expansion of the program with the aid of Pittman-Robertson funds has been extensive. Of the 146,353 acres under agreement in this field division, 139,584 were leased and mapped with the aid of these monies. Most of the projects are moderate in size, with a total of 16 distributed throughout seven counties of the division. Several projects located in Adams, Bedford, Blair, Cumberland, Franklin, Juniata and Perry Counties, total more than ten thousand acres each. The statewide program consists of 10,383 farms containing 1,048,145 acres.

Wildlife habitat development is an important part of this program. Over 450,000 seedlings were distributed to cooperating farmers and planted along steep slopes, odd corners and at other locations not adaptable to agriculture. Over 46,000 linear feet of woodland borders were improved by cutting the overshadowing tree growth for a width of 30 feet along the field edges. Technical assistance was rendered to cooperators in establishing conservation practices. As an incentive to encourage use of cover crops beneficial to wildlife, these landowners were given over 32,000 pounds of rye grass seed for planting after the last cultivation of corn. In addition, a total of 592 pints of crow repellent was distributed and used to treat seed corn, in an effort to reduce damage by crows and blackbirds.

Accompaning tables outline accomplishments on lands owned and leased by the Pennsylvania Game Commission in the Southcentral Division. The various practices were partly financed with funds supplied under the Pittman-Robertson Act. The map of this portion of the state designates locations of these project areas.

This is the sixth of a series of articles on each Commission Field Division, reporting to sportsmen and conservationists how Pittman-Robertson money has been and is being spent in an effort to maintain and improve wildlife conditions in Pennsylvania. It is hoped that these articles will encourage you, as a sportsman, to personally visit and inspect this important management work.

Several orchards of Asiatic chestnut trees are maintained in southcentral Pennsylvania, many of them planted in cooperation with the United States Department of Agriculture in an effort to select trees resistant to the blight.



Pennsylvania Official 1954 Open Seasons and Bag Limits

(Regulations apply for Hunting License Year, September 1, 1954-August 31, 1955)

Open season includes first and last dates listed, Sundays excepted, for game. The opening hour for small game and other wild birds or animals on October 30 will be 9:00 A. M. Otherwise, shooting hours daily are from 7:00 A. M. to 5:00 P. M., but from July 1 to September 30 inclusive, 6:00 A. M. to 7:30 P. M. (All shooting hours based on Eastern Standard Time.)

	BAG LIMITS		OPEN SEASONS	
UPLAND GAME (Small game possession limits below)	**Day**	**Season**	**First Day**	**Last Day**
Ruffed Grouse	2	8	Oct. 30	Nov. 27
Bobwhite Quail	4	12	Oct. 30	Nov. 27
Wild Turkeys	1	1	Oct. 30	Nov. 27
Ringneck Pheasants, males only	2	8	Oct. 30	Nov. 27
Rabbits, Cottontail	4	20	Oct. 30	Nov. 27
Squirrels, Gray, Black & Fox (combined)	5	20	Oct. 30	Nov. 27
Squirrels, Red (closed October 1 to 29 incl.)	Unlimited		All mos. (except Oct. 1-29)	
Hares (Snowshoe Rabbits)	2	6	Jan. 1	Jan. 8, 1955
Raccoons	Unlimited		Unprotected	
Woodchucks (Groundhogs)	Unlimited		Unprotected	
Grackles	Unlimited		Unprotected	
Bears, over one year old, by individual	1	1	Nov. 15	Nov. 27
Bears, as above, by hunting party of three or more	2	2	Nov. 15	Nov. 27
DEER: Bow and Arrow Season—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal (requires hunting license and Special Archery License) by individual	1	1	Oct. 11	Oct. 23
DEER: Regular Season—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal: by individual	1	1	Nov. 29	Dec. 11

NO OPEN SEASON—Hungarian Partridges, Hen Pheasants, Sharp-tailed Grouse, Cub Bears, Elk, Spike Bucks with antlers less than three inches long, Antlerless Deer, and Otters.

FURBEARERS:			
Skunks and Opossums	Unlimited	Unprotected	
Minks	Unlimited	Nov. 5	Jan. 1, 1955
Muskrats (traps only)	Unlimited	Dec. 1	Feb. 1, 1955
Beavers (traps only) state-wide	4	Feb. 14	Mar. 5, 1955

SPECIAL REGULATIONS

POSSESSION AND TRANSPORTATION LIMITS of legally-killed small game shall mean not more than the daily limit for the first day nor more than an accumulated total for each succeeding day of the open season for each species; but not in excess of the season limit, regardless of where held, stored or found in possession.

DEER--Even though there are two separate seasons for taking deer, a hunter may not kill more than one deer during the two combined 1954 seasons, whether hunting individually or with a camp or hunting party. A Special Archery License is required during Bow and Arrow Season, issued only by the Pennsylvania Department of Revenue, Harrisburg, at a fee of $2.00.

BEAVERS—No trapping at Commission-posted dams. Nonresidents may not trap beavers. One person may set, tend or operate 10 traps only. Traps must not be set on the structure of any beaver dam or house, or within 25 feet of the waterline on the structure of either thereof. Tags must be kept above ice or waterline to facilitate identification without disturbing traps. Pelts must be tagged within 10 days after season, and may not be sold or otherwise disposed of until properly tagged. Present them to the Game Protector in District or County where trapped.

TRAPPING—Traps for furbearers not to be placed, staked or set before 7:00 A. M. on the first day of the open seasons. The season indicated for Trapping closes at 12:00 o'clock Noon on last day. Traps must be tagged with metal name tags.

SNARES—The use of snares is prohibited in all counties except by special permit.



FINANCING PENNSYLVANIA'S WILDLIFE PROGRAM

By N. E. Slaybaugh, Comptroller

A Report on the Finances of the Game Fund during the Fiscal Year June 1, 1953 to May 31, 1954:

IN line with a long-standing policy of the Game Commission, we are again pleased to present, as a matter of information to the sportsmen of Pennsylvania, a summary covering Game Fund expenditures for the fiscal year ending May 31, 1954. The Commission's entire wildlife conservation program must be planned to stay within the limit of funds becoming available yearly from the sale of hunting licenses and such other sources of revenue which can legally be credited to the Game Fund. Budgets based on monies thus acquired are prepared in detail so as to finance each of the activities functioning during the ensuing year.

Facts and figures offer little excitement. However, this story cannot be told without them. In the text to follow we endeavor to publish a complete report on the disbursements of the money made available for the use of the Game Commission from the Game Fund for the fiscal year June 1, 1953 to May 31, 1954, amounting to a total of $3,825,103.49. While this report is an accurate accounting of Game Fund dollars spent, it is impossible to evaluate the major contributions to the success of the overall conservation program which includes such items as:

1. The undivided attention and services rendered by each individual member of the Game Commission, who serves without any compensation whatsoever.
2. The Game Protectors, other Commission employes and representatives who have given of their time beyond the call of duty.
3. The farmers and landowners who serve as hosts to approximately a million hunters annually.
4. The excellent cooperation and team work of organized and individual sportsmen, grangers, and others who are tireless in their efforts to promote better conservation practices; grateful recognition to those who, individually or collectively, have aided in this current program and were not mentioned specifically in the foregoing paragraphs.

When reduced to simple terms, our financial picture is not complicated. Therefore, for the year beginning June 1, 1953 and ending May 31, 1954, we relate the

following story:

During the year we received monies from various sources which were deposited in the Game Fund, as follows:

Hunters' Licenses (including Resident, Nonresident, Antlerless Deer and Archery	$3,341,579.55
Game Law Fines	160,911.75
Special Game Permits (Fur Dealers, Taxidermists, Game Propagators, etc.)	18,306.00
Interest on Game Fund Deposits	14,703.63
Sale of Forest Products from Game Lands	51,827.73
Sale of Animal Skins	5,639.96
Sale of Unserviceable Property and Equipment	2,841.79
Rental from Commission-owned Buildings	26,730.18
Ground Rental and Royalties from Gas and Oil Leases	108,837.35
Sale of Publications (principally GAME NEWS subscriptions)	39,199.80
Federal Aid for Wildlife Purposes (75% of Cost of Approved Projects)	586,886.47
Sale of State Game Land to Dept. of Forests and Waters	19,584.00
Right-of-Way Leases and Damages, Royalties on Coal, etc.	33,396.77
Total Receipts from all sources deposited in the Game Fund during the year	$4,410,444.98

With the amount on hand at the beginning of the year (1,501,294.43) and what was deposited during the year ($4,410,444.98) there was accumulated from all sources $5,911,739.41.

During the year $3,825,103.49 of the total sum accumulated was spent for the following purposes:

Executive Office, Accounting and Office Expenses	$ 221,683.62
Research for Wildlife Improvement	66,192.49
Conservation Education	237,956.14
Training School (General Maintenance)	2,738.22
Land Utilization Operations	1,349,870.29
Propagation, Purchase and Distribution of Game	937,790.91
Wildlife Protection including Law Enforcement	848,311.86
Payment of Bounty Claims and Administrative Expenses Relating thereto	160,559.96
Total	$3,825,103.49

MAY 31 CASH BALANCE

This year, as during the preceding years, all bills were paid by the Treasury Department as of May 31, 1954, thereby automatically bringing the accounts of the Commission and Treasury Department into complete agreement. Since there was accumulated $5,911,739.41 and there was spent $3,825,103.49 we came to the end of the fiscal year with a cash balance of $2,086,635.92. We are certain that this system is serving its purpose, namely, eliminating any confusion about the true cash balance in the Game Fund at the end of any fiscal year—May 31.

Sportsmen, especially new subscribers to the GAME NEWS are often confused about the need of a large cash balance at the end of each fiscal year. They say "Why do you need a large cash balance as of May 31 each year? Why don't you spend it?" The explanation is simple—during the months of June, July, August and September of each year, the work must go on and be paid for as usual, but that is a very lean period for receipts. The bills to be paid during those four months are about $1,000,000 more than the money received for the same period, so instead of spending all the money accumulated each fiscal year, a sufficient sum must always be saved to pay the bills from June 1 to September 30. By October 1 each year the new license money starts to come in and from that time there is sufficient money received currently to finance the program undertaken to the end of the fiscal year. Previously the amount was about $1,000,000, but with the expanded program more funds are necessary to pay the bills on a current basis. A minimum of $1,250,000 working capital is a desirable objective to stabilize the operations of the Commission during the months that expenditures greatly exceed income.

The present working capital of $1,227,800 provides only for the usual expenditures during this period but nothing for emergencies that could arise. What do you suppose would happen if the opening of the hunting season were delayed by Proclamation of the Governor due to extremely dry forest and field conditions which could result from a prolonged drought? It could easily delay the receipt of monies and develop a very serious financial situation since the Commission has no means by which it can borrow any money for any purpose at any time. These facts should make any person realize that the Commission must be both business like and careful in its financing.

AUDIT OF GAME FUND

Questions concerning any published report, such as "Are the figures correct?" or "Are the acounts in order?, are timely and certainly apply to the Game Fund.

By an Act of General Assembly, the Auditor General is required to audit State Departments, Boards and Comissions. At the time this article went to press no formal audit for the period had been made. However, every bill is audited by the Auditor General before payment is made. The application of sound management and business practices employed by the Commission is further attested to in the audit reports for nine previous years, six of which contained no criticism or suggestions for improvement, and three which contained

several suggestions of a minor nature. The same high standards were maintained during the year reported herein, and it is reasonable to assume that the audit, when made and a report filed, will show that the affairs of the Commission were handled in an equally efficient manner. We try to improve our operating machinery constantly. The foregoing is the simple story of our finances for the last fiscal year.

NOW FOR THE DETAILS

Our Annual Report must satisfy not only the persons who want a quick picture but also those who desire details. It is believed the foregoing material will meet the requirements of the first group. However, for the benefit and information of the latter group, certain statements and charts are made available with this article. By looking at the chart and referring to Table No. 1, you will find in greater detail the functions for which the monies were used and the number of cents of each dollar expended that was used for each purpose.

By referring to Table No. 2, you will find the cash balances in the Treasury Department at the beginning and ending of the fiscal year, the receipts from the various sources during the year and the total funds available during the year. It also shows the various classifications of exepnditures that comprise the total cost of each organizational unit as well as the total spent by all units for each classification.

STATE-WIDE FIELD OPERATIONS

Over one-half of the Game Fund expenditures is spent for land utilization and wildlife protection operations, including law enforcement—all field activities. Believing there is a general interest in the field operations and the amount spent for each activity, we are giving below supporting details:

EARMARKED FUND

Under the provisions of the Game Law, as amended by the 1949 General Assembly, not less than $1.25 from each Resident Hunter's License fee shall be used for improving and maintaining natural wildlife habitat on land that is available for public hunting; the purchase, maintenance, operation, rental and storage of equipment used in this work; the purchase, distribution, planting, cultivating and havesting of game foods; the purchase, trapping and distribution of all species of game, as well as providing protection to the property of Farm-Game Cooperators.

This program has been in operation for five (5) years. The table below shows the expenditures in relationship to the minimum amount required by law for the fiscal years ending May 31, 1950, May 31, 1951, May 31, 1952, May 31, 1953 and May 31, 1954:

Year Ending	Expenditures	Minimum Amount Required
May 31, 1950	$1,211,687.72	$1,012,573.75
May 31, 1951	1,266,856.18	1,002,435.00
May 31, 1952	1,095,938.26	1,012,936.25
May 31, 1953	1,163,287.09	1,037,683.75
May 31, 1954	1,247,584.35	1,073,440.00
Totals	$5,985,353.60	$5,139,068.75

During the five year period, the Commission spent $846,284.85 in excess of the

WILDLIFE PROTECTION

Game Law Enforcement on a State-wide Basis	$ 641,051.66
Proportionate Share of Field Division Office Administration	54,914.21
Maintenance of Prisoners Incarcerated for violation of game laws	1,929.00
General Administrative expenses chargeable to Wildlife Protection	39,151.73
Activities in connection with the control of predators	50,202.15
Protecting Farm-Game Projects	21,957.13
Payment to Retirement System for Employes	39,105.98
Total Cost During the Fiscal Year for this Purpose was	$ 848,311.86

LAND UTILIZATION

Food and Cover Projects on State-owned Lands	$ 618,891.42
Food and Cover Projects on other than State-owned Lands	19,450.08
Maintenance and Development of State Game Lands, Primary and Auxiliary Refuges, Dog Training and Archery Preserves	124,131.31
Purchase of Land Including Title and Survey Costs	76,335.11
Establishing, Maintaining, Development and Operating Farm-Game Projects	186,844.92
Proportionate Share of Field Division Office Administration	82,371.31
Conservation Development Work in Cooperation with Federal Government	19,510.54
Purchase of Equipment (trucks, tractors, graders, etc.)	33,207.46
Feeding of Game in the Wild	81,653.57
General Administrative Expenses Chargeable to Land Utilization	64,206.98
Maintenance of State Game Propagation Areas	5,840.72
Payments to Retirement System for Employes	23,279.68
Building Construction on State Game Lands	4,266.44
Establishing and Maintaining Rabbit Farms (exclusive of Food and Cover Projects)	9,880.75
Total Cost during the Fiscal year for this purpose was	$1,349,870.29

minimum amount required by law for these operations.

CAPITAL INVESTMENTS

The entire Game Fund is not available for normal operating expenses, such as salaries, traveling expenses, wages, feed for game, payment of bounties, etc., but a certain amount must be spent for the essential working tools of the Commission, also maintenance expense incidental thereto. To produce a shootable supply of game and provide natural habitat with adequate food and cover requires land, game farms, buildings, pick-up trucks, heavy motorized equipment, etc. Money spent for such items is commonly referred to as "Capital" expenses. Just as it is impossible for large industrial plants to operate successfully without making "Capital" expenditures so it is with the Game Commission. The table below gives the actual consideration paid for land, together with the estimated value of other items as of May 31, 1954:

State Game Lands (1920-1954) ..	$4,345,627.93*
Buildings on State Game Lands	128,250.00†
Game Propagating Farms (including land, buildings and equipment)	511,371.54†
Conservation School (including buildings and equipment)	32,336.40†
Equipment (including automobiles, trucks, tractors, graders, etc.)	194,638.86†
Total	$5,212,224.73

* Consideration paid for lands including title and survey costs.
†Estimated value as of May 31, 1954.

HUNTING LICENSES ISSUED

To give you information on the general trend of hunting license sales since the license law was enacted in 1913, license sales at 5-year intervals from 1913 to 1943, and yearly from 1944 to 1953 are given below:

Year	Resident	Non-Resident	Total Licenses
1913	305,028	No Record	305,028
1918	311,290	478	311,768
1923	497,216	2,328	499,544
1928	437,727	1,190	438,917
1933	524,337	4,966	529,303
1938	654,146	7,584	661,730
1943	570,901	11,833	582,734
1944	593,917*	13,983	607,900
1945	696,394*	17,227	713,621
1946	832,846*	23,174	856,020
1947	822,423*	28,012	850,435
1948	854,840*	28,085	882,925
1949	815,915*	24,032	839,947
1950	808,171*	26,001	834,172
1951	826,044*	31,278	857,322
1952	830,779*	32,042	862,821
1953†	858,752*	31,614	890,366

† Preliminary report, subject to minor changes.

* Includes free licenses issued to Members of the Armed Forces and Disabled Veterans.

TABLE NO. 1
SUMMARIZED FUNCTIONAL EXPENDITURES

The expenditures of the Commission during the fiscal year ended May 31, 1954 have been subdivided into major activity groupings as follows:

		Part of Dollar
Utilization of Land for Wildlife Management of State Game Lands, Cooperative Farm-Game Projects and other leased areas totaling 2,055,660 acres. Also payments in lieu of taxes	$1,349,870.29	35¼
Propagation of Game, Operation of game farms, purchase of game, wild game transfer, distribution of game	937,790.91	24½
Protection of Wildlife. Salaries and expenses for enforcement of game laws; assistance in enforcement of fish, dog and forest laws and numerous other field activities	848,311.86	22¼
Conservation Education. Game News, publications, exhibits, motion pictures, radio broadcasts, attending Sportsmen's meetings, etc.	237,956.14	6¼
Bounty Payments. Bounties on noxious animals including administrative expenses relating thereto	160,559.96	4¼
Wildlife Research. Wildlife studies to determine practical methods for developing management programs	66,192.49	1¾
Instruction and Training. Maintenance of buildings and grounds. (Training School temporarily inactivated)	2,738.22	..
Executive Office. Accounting and Office Service ($221,683.62, subdivided below):		
Accounting and Office Service. Audit of accounts and bookkeeping, personnel matters; supervision over purchases, equipment and supplies	80,542.57	2¼
Hunting Licenses. Including tags, applications, reports	77,761.76	2
Executive Office. Administration, Salaries and expenses of Executive Office and expenses of Commissioners	40,293.38	1
Mailing, Mimeographing, etc., includes postage	23,085.91	½
TOTALS	$3,825,103.49	100

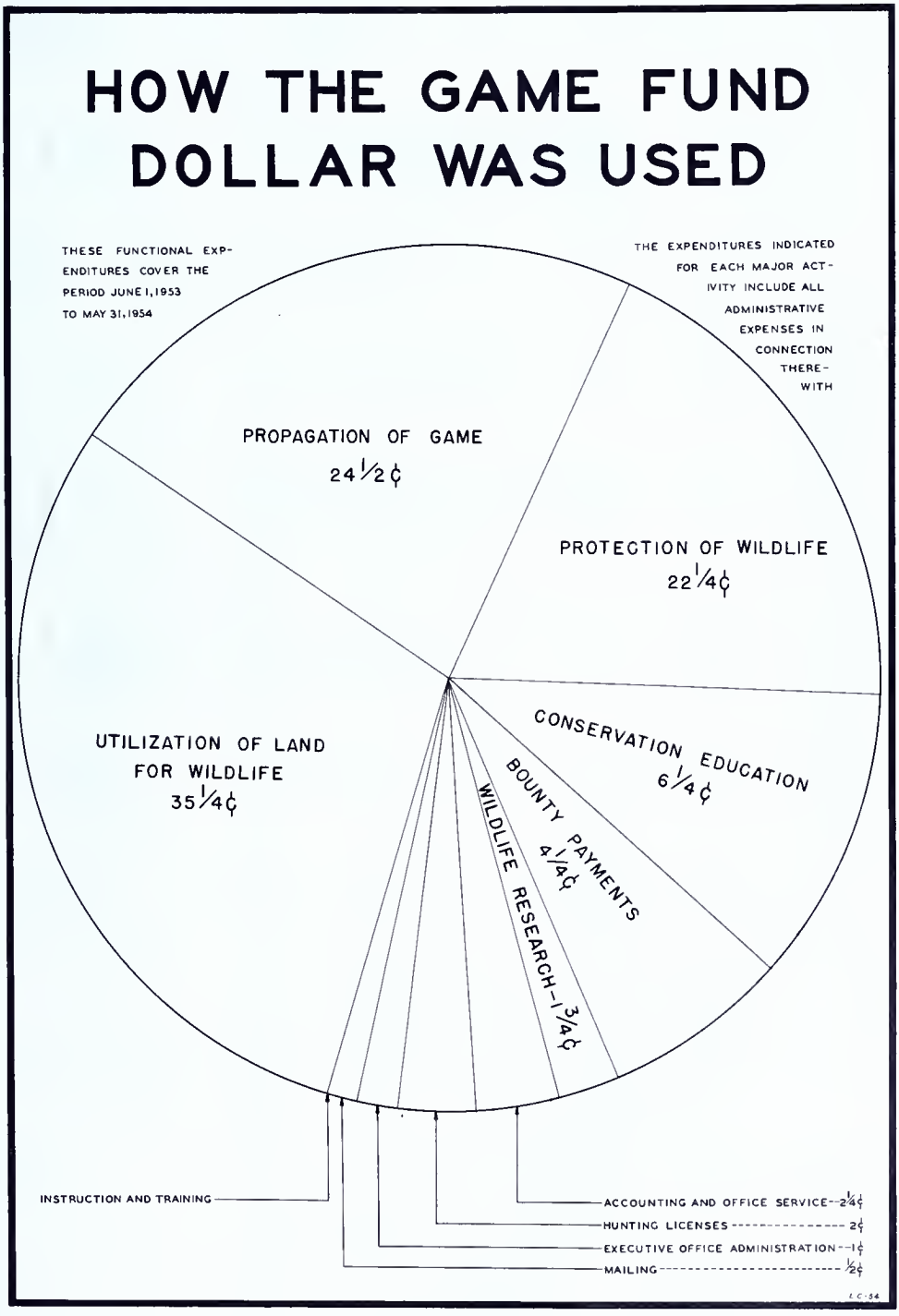

HOW THE GAME FUND DOLLAR WAS USED
THESE FUNCTIONAL EXPENDITURES COVER THE PERIOD JUNE 1, 1953 TO MAY 31, 1954
THE EXPENDITURES INDICATED FOR EACH MAJOR ACTIVITY INCLUDE ALL ADMINISTRATIVE EXPENSES IN CONNECTION THEREWITH
PROPAGATION OF GAME 24 1/2¢
PROTECTION OF WILDLIFE 22 1/4¢
CONSERVATION EDUCATION 6 1/4¢
BOUNTY PAYMENTS 4 1/4¢
WILDLIFE RESEARCH—3/4¢
UTILIZATION OF LAND FOR WILDLIFE 35 1/4¢
INSTRUCTION AND TRAINING
ACCOUNTING AND OFFICE SERVICE--2 1/4¢
HUNTING LICENSES--2¢
EXECUTIVE OFFICE ADMINISTRATION--1¢
MAILING--1/2¢
I.C.-54

TABLE NO. 2

PENNSYLVANIA GAME COMMISSION

STATEMENT OF REVENUE, EXPENDITURES AND CASH BALANCES, FISCAL YEAR JUNE 1, 1953 TO MAY 31, 1954

REVENUE

Cash in State Treasury to credit of "Game Fund" June 1, 1953		$1,501,294.43
Receipts June 1, 1953 to May 31, 1954:		
Hunters' Licenses (after deducting the Issuing Agents' Commission)	$3,341,579.55	
Game Law Fines	160,911.75	
Special Game Permits (Fur Dealers, Taxidermists, Game Propagators, etc.)	18,306.00	
Interest on Deposits	14,703.63	
Sale of Forest Products from Game Lands	51,827.73	
Sale of Animal Skins	5,639.96	
Sale of Unserviceable Property and Equipment	2,841.79	
Rentals from Buildings and Land	26,730.18	
Sale of Publications	39,199.80	
Federal Aid for Wildlife Purposes (75% of cost of approved projects)	586,886.47	
Ground Rental and Royalties from Gas and Oil Leases	108,837.35	
Sale of Game Land to Department of Forests and Waters	19,584.00	
Right-of-way Leases and Damages, Royalties on Coal, Etc.	33,396.77	
Total Receipts from All Sources		4,410,444.98
Total Funds Available during Year		$5,911,739.41

CLASSIFICATION OF EXPENDITURES BY ORGANIZATIONAL UNITS

Classification of Expenditures	Exec. Office and Acct'g & Ser.	Game Propagation	Wildlife Research	Land Utilization	Wildlife Protection	Bounty Claims	Conservation School (Instruction and Training)	Conservation Education	Total
Salaries	$103,510.53	$155,007.19	$37,698.80	$247,972.75	$471,627.63	$ 16,855.50	$	$ 87,550.71	$1,120,223.11
Traveling Expenses of all kinds, including auto mileage	6,039.21	24,701.29	8,976.45	53,369.88	133,784.68	.....	75.30	16,860.82	243,807.63
Deputy Game Protectors (Wages and Expenses)	.....	.....	.....	.....	101,802.11	.....	.....	.....	101,802.11
Cooperative Farm-Game Program (Total Cost)	.....	130,477.00	.....	186,844.92	21,957.13	.....	.....	.....	339,279.05

Wages (Land Management, etc.)	.....	.....	.....	418,736.16	.....	.....	.....	.....	418,736.16
Wages (Game Farms, etc.)	4,811.12	166,090.76	1,827.14	.....	8,592.40	.....	998.64	7,560.79	189,880.85
Purchase of Game	.....	103,898.59	.....	.....	.....	.....	.....	.....	103,898.59
Rabbit Trapping and Wild Game Transfer	.....	38,986.77	.....	.....	.....	.....	.....	.....	38,986.77
Feed (for Game Farms and game in the wild)	.....	221,957.28	.....	38,964.97	.....	.....	.....	84.59	261,006.84
Express and Cartage	2.35	569.19	204.78	2,657.69	2,108.25	52.86	.....	338.81	5,933.93
Purchase of Lands (title and survey included)	.....	.....	.....	76,335.11	.....	.....	.....	.....	76,335.11
Payments in Lieu of Taxes to Local Taxing Units	.....	215.94	.....	66,959.17	.....	.....	.....	.....	67,175.11
Building and Construction (mostly on Game Farms)	.....	4,029.07	.....	4,266.44	.....	.....	.....	250.00	8,545.51
Repairs to Buildings, Grounds and Equipment by Contract	67.94	197.55	.....	4,019.31	62.94	10.50	118.69	235.87	4,712.80
Equipment (mostly for land management and Game Farms)	508.52	2,301.82	28.48	34,538.30	1,065.95	.....	.....	100.19	38,543.26
Miscellaneous Supplies	3,643.56	27,978.70	851.66	105,155.94	8,835.76	147.24	44.40	11,950.89	158,608.15
Motor Supplies	634.13	17,900.67	262.64	41,140.18	5,021.28	.....	327.03	1,103.69	66,389.62
Light, Power and Fuel	.....	8,340.03	.....	630.80	281.44	.....	979.60	1,660.53	11,892.40
Insurance	727.54	2,284.93	184.31	10,289.41	3,176.55	89.22	19.03	510.11	17,281.10
Postage, Telephone and Telegraph	9.654.82	2,831.61	537.49	9,262.55	19,554.49	1,021.45	118.11	5,733.69	48,714.21
Rental of Equipment, Offices, Auto Storage, etc.)	342.63	14,718.18	.....	21,183.14	6,991.58	16.18	.....	2,892.20	46,143.91
Bounty Payments and Grants	.....	.....	12,000.00	.....	.....	140,926.00	.....	3,500.00	156,426.00
Refund of Receipts	137.05	.....	.....	.....	475.00	.....	.....	.....	612.05
Fees:—Artists, Attorneys, Medical, Taxidermy, etc.	.....	.50	.....	387.15	999.60	.....	.....	12,555.79	13,943.04
Bear Damage Claims	.....	.....	.....	.....	4,698.64	.....	.....	.....	4,698.64
Other Maintenance Services and Expenses	1,324.46	484.82	.....	381.46	2,346.26	58.30	57.42	1,262.00	5,914.72
Newspaper Advertising	.....	.....	.....	1,578.04	9,308.97	.....	.....	.....	10,887.01
Printing, Binding and Paper	3,974.11	541.46	523.24	1,917.24	6,515.22	27.55	.....	76,642.48	90,141.30
Printing Hunters' Licenses, Tags and Misc. Forms* (through Department of Revenue)	77,761.76	.....	.....	.....	.....	.....	.....	.....	77,761.76
Contributions to State Employes' Retirement System* (through Department of State)	8,518.14	14,277.56	3,097.50	23,279.68	39,105.98	1,355.16	.....	7,162.98	96,797.00
Replacement Checks* Through Department of Treasury	25.75	.....	.....	.....	.....	.....	.....	.....	25.75
TOTAL EXPENDITURES	$221,683.62	$937,790.91	$66,192.49	$1,349,870.29	$848,311.86	$160,559.96	$2,738.22	$237,956.14	$3,825,103.49

Amount Available in "Game Fund" May 31, 1954 (including $1,496,137.50 in U. S. Government Securities) $2,086,635.92

Amount Available in "Game Fund" May 31, 1954 (including $1,496.137.50 in U. S. Government Securities) $2,086,635.92

* These items are paid out of the "Game Fund" upon requisitions drawn by the Department of Revenue, Department of State and the Department of Treasury and are included to complete the picture of the "Game Fund" finances.



Sportsmen Honor Game Protector

On June 3rd, another public servant learned that friendly, efficient service is appreciated. On that date Game Protector Leo E. Bushman, of Gettysburg, was tendered a testimonial banquet at McSherrystown by the Adams County Federation of Sportsmen's Clubs. The event was in recognition of the officer's retirement September 1st. Bushman has been a game protector over 34 years, most of that time in Adams County.

Dr. Logan J. Bennett, Executive Director of the Game Commission, delivered the principal address. He traced the honor guest's career in the wildlife field and told how Pennsylvania reached its prominence as a great game state. Game Protector Bushman was later tendered a plaque and several gifts in appreciation of his years of conscientious service in the sportsmen's interest.



Leo A. Bushman, well-known and widely respected Pennsylvania Game Protector in Adams County will retire September 1st after 34 years of service.

Present with the sportsmen at the occasion were W. Clarence Sheely, Presiding Judge of Adams County, Arthur G. Logue, Bushman's division supervisor, other officials of the game organization, W. W. Britton, chief enforcement officer of the Fish Commission, and a host of other friends and well-wishers.

Conservation Camp for Girls

A conservation camp session for girls is planned for this summer. Subjects to be covered and camp experiences for the attending Pennsylvania girls will be the same as those proved best for boys in previous Junior Conservation Camps. Ladies having Girl Scout counseling or directing experience, will provide the leadership.

The Pennsylvania Federation of Garden Clubs, Pennsylvania Women's Clubs and the Pennsylvania Roadside Council, Inc., will be the sponsors of the girls' camp. They will recruit the attendees and defray their camp expenses, and each unit will provide transportation to and from camp for the girls it sends.

The camping period will cover thirteen days, August 5-18, and will follow that last boy's group this summer. Tentative plans call for a quota of 40 to 50 freshmen and sophomore high school girls. This contingent will be a pilot group. Experience gained from this initial experience will suggest the future course to be followed.

The well equipped Forestry Camp of The Pennsylvania State University will house the girls.



PGC Photo by Ralph Cady

Col. Nicholas Biddle, left, present vice-president of the Game Commission, presents William G. Fluke, of Saxton, a testimonial plaque in appreciation of his contribution and enthusiasm in Pennsylvania's wild turkey restoration program. Col. Biddle was Commission president during the period 1935–1940 when Mr. Fluke served as Commissioner. The presentation was made by the current Game Commission during an open meeting with representatives of leading sportsmen's and other conservation organizations of the Commonwealth at Harrisburg on June 30.

Bounty Claims and Payments Decline

In the Game Commission's fiscal year ending May 31, 1954, the number of bounty claims honored was 14,191. Payment of rewards for the killing of certain predacious animals and great horned owls totaled $140,926 in that period.

In the year just ended bounty was paid on wild creatures as follows: weasels, 10,757; gray foxes, 14,730; red foxes, 16,266; great horned owls, 1,237.

Both claims and bounty payments have declined steadily in recent years. In the previous fiscal year 15,476 valid claims caused payment of $159,548. In the twelve-month period before that $226,014 were paid for 18,830 claims submitted.

Game Protector Follows Nose to Evidence

An item from a recent issue of the Kittanning *Daily Leader Times* tells that an Armstrong County Game Protector named Bill Shaffer solved an illegal wild game killing. He apprehended the violator and confiscated the evidence—piping hot from the stove oven.

Shaffer went after the man after receiving a report a wild turkey had been shot. The game protector found half of the 16 pound bird in the violator's oven. The other half had already been consumed by a brother-in-law. Both men paid $25 fines.

The big "tom" turkey had been shot two days earlier. A 30-30 caliber rifle was the firearm used, the *Leader Times* said.

IT'S DOG TRAINING TIME

Pennsylvania sportsmen who own hunting dogs are glad to see August roll around each year. Starting on the first day of this month, and continuing until March 31, 1955, it's dog training time in the field. Dog owners are reminded that training is lawful but, except on publicly-owned land, consent of the owner of the property where such training is contemplated should first be secured. The law prohibits the carrying of a shotgun or rifle during dog training. Rabbit or bird dogs may be trained from sunrise to 9 p. m., Eastern Standard Time; raccoon dogs from sunrise to midnight. In any case, dogs must be accompanied by and under the control of their owner or handler. Injury or death may not be inflicted upon birds or animals pursued by dogs in training.



Pennsylvania Game Commission Conference

MONT ALTO, JUNE 14-17

For the first time in six years, the entire field force, plus most of the Harrisburg staff, of the Pennsylvania Game Commission held a highly successful training conference at the State Forest School, Mont Alto from June 14-17. Although division meetings are held periodically in various parts of the Commonwealth, this in-service conference was the first of statewide scope since a similar meeting at Indiantown Gap in September, 1948.

The Franklin County campus was placed at the disposal of the state's wildlife officers through the courtesy of the Department of Forestry, Pennsylvania State University. In addition to providing adequate facilities for such a meeting, the beautiful grounds of the school added a final appropriate touch.

The conference was packed with panel discussions and other lectures on the many phases of wildlife management. Highlighting the speeches given by distinguished guests from other state and federal agencies were addresses by the Hon. Miles Horst, Pennsylvania Secretary of Agriculture, and C. K. Gutermuth, vice-president of the Wildlife Management Institute, Washington. Subjects such as game land utilization, wildlife research, education and information to the public, law enforcement, predator control, game propagation and hunter casualty prevention occupied most of the time of the field officers and officials in attendance. Commission members present for all, or part, of the program included: President John C. Herman, vice-president Nicholas Biddle, B. K. Williams, Andrew C. Long, and Tom L. McDowell. Dr. Logan J. Bennett, Commission Executive Director, served as conference chairman.

The exchange of information and ideas between field officers and the opportunity to discuss problems with Commission officials and administrators was of inestimable value to Commission personnel. Knowledge obtained from any sources at this conference will be returned in the form of better game administration in the future.

The conference ended on Thursday, June 17, with an intra-divisional pistol match in which game protectors demonstrated their prowess with the service revolver. A handsome trophy was presented to the Northwest Division winner of the team match, by the donor, Commission president John C. Herman.



Commission president John C. Herman presents the trophy to the winning pistol team from the Northwest field division. The entire Game Commission field force fired the Standard American, 25 yard course to conclude the Mount Alto conference. The championship team, left to right: Game Protector George Miller, Bill Overturf, Division Supervisor Temp Reynolds, Game Protectors Les Haney, Ed Borger, and Cal Hooper.

Below: Game Commission "old-timers" who attended a similar conference in Williamsport during 1925 are, left to right—Art Logue, John Lohman, Maurice Sherman, Rollin Heffelfinger, Bruce Yeager, Hayes Englert, Leo Bushman, Bob Latimer, Wilbur Cramer, Nelson Slaybaugh, Carl Benson, John Spahr, and Ike Baumgardner. Of these veteran officers, Sherman, Bushman, Logue, Cramer, Benson, and Hugh Groniger (not shown) are the only officers still in service who attended the first Commission conference at Conneaut Lake in 1922.





OUTDOOR FUN WITH A FUTURE



Small Mammals Are Fun

ONE of the most common small mammals of the northeastern part of the United States is named after the state of Pennsylvania. The scientific name of the meadow mouse is microtus Pennsylvanicus. It may or may not be an honor, depending upon how you look at it, but mice and other small mammals can be interesting to watch and can provide the subject matter for several very worthwhile outdoor projects.



An artist from New York once found his hunting cabin in the mountains overrun with deer or white-footed mice. It was obvious he had to trap them to get rid of them, but he didn't have a trap and it was too far to the nearest hardware store. He figured out a way to make a live trap that was always "set," so he could catch quite a few over the weekend. The trap was a success, but when it came to destroying the mice, they were such interesting little things he decided to keep them as pets and perhaps do some sketches of them. Some day, he thought, he'd write a book on mice and illustrate it with his sketches.

But the first time he sat down to sketch, he noticed something unusual. One of the mice would walk around the cage and suddenly jump up in the air and turn a back somersault. The mouse would do these flip-flops every once in a while for no apparent reason.

It turned out that this mouse was a female, and one day she had some young. Two of the young were like the mother—they liked to turn flip-flops too. What started out to be a project to get rid of mice in a hunting cabin, turned into some very interesting drawings of a family of "acrobatic" mice.

Not all mice or small mammals will do tricks like that, but they are fun to watch and keep as pets nevertheless.

Mice and rats in the wild are not always nice to have around either. They do a tremendous amount of damage to hay and forage crops and even to grain and food products that we eat. It has been estimated that rodents damage an amount of food equal to that produced by 200,000 average farms each year, or enough to feed 10,000,000 people.

Mice and rats reproduce at a terrific rate and if there were not controls such as predators or disease they might soon take over our country. One female meadow mouse, for example, may produce 100 mice per year. If half of those mice are females, and if they can breed when they are a month old, you can see easily what the number of mice might amount to if it were not for hawks, owls, skunks, weasels or foxes that eat mice by the thousands, or diseases that kill them.

Later on we'll talk about how to control rodents if they are too numerous around the house or on the farm. But first, let's live-trap a few and see what they look like and how they live. The illustrations on these pages show three of the easiest traps to make.

To make the first one—the best of the three for mice and chipmunks—you need a #5 tin can, (this is the tall can that fruit juices come in), a mouse trap, some soft copper wire or baling wire, and some every day tools. Follow the steps in the illustrations and you'll find this an easy trap to make. While you're at it, make three or four. Then you can set them all at once and perhaps catch three or four mice at once.

The second is good for chipmunks, and is also easy to make. It is a little heavier than the first kind, but it will serve as a cage also, until you get a better cage built.

The third kind is the clumsiest of all—but it is always "set" and you can catch more animals in it. The only danger using it outdoors is, that a

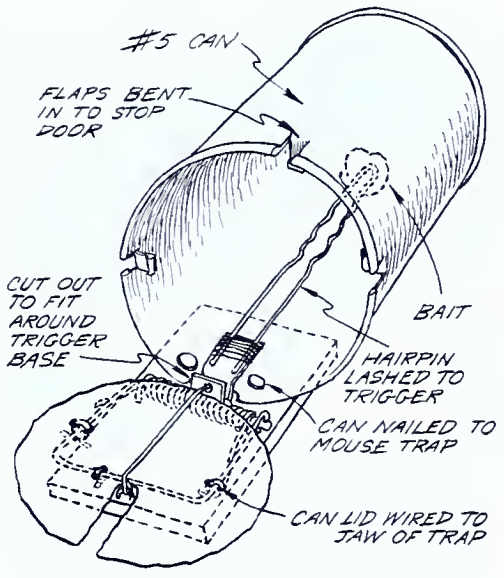


FIG. 1

weasel or skunk may beat you to it, and clean out your catch.

But whatever kind of trap you use, check it several times a day. Mice need a lot of food—an amount equal to about their own weight every day, and they'll soon die without it. Also, if you intend to keep them as pets, be sure to have a cage ready for them. Don't try to keep them in a tin can for more than hour or two.

There are several kinds of baits that are very attractive. For deer mice, set your traps in edges of woods, in hedgerows, around wood piles or piles of logs. Bait them with pieces of cookies, peanut butter, cornmeal mush (sugar added), oatmeal (sugar sprinkled on) or small pieces of store cheese.

Set traps for meadow mice in fields near old piles of hay or in uncut hay fields. Bait them with small "globs" of oatmeal, cornmeal or seed paste. Meadow mice do not make as good pets as deer mice, though.

Other mice you might catch in Pennsylvania would be: the red backed mouse in wooded areas); the pine mouse; or a jumping mouse. You

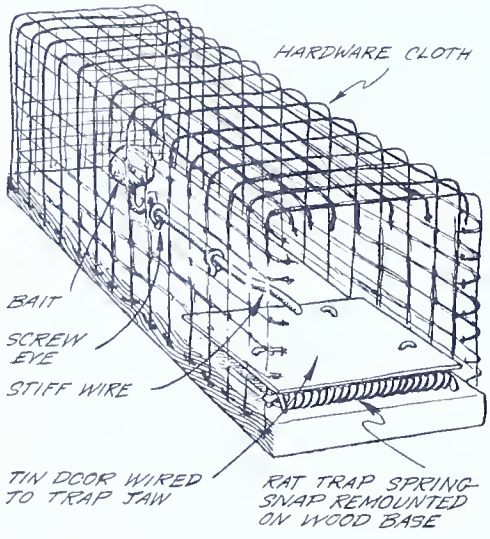


FIG. 2

might also catch a wood rat. All of these animals are found in wooded areas or along the edges of woods.

Chipmunks probably make the best pets of all and very easy to catch alive. Use either of the first two traps, and bait it with small pieces of apple, walnut or butternut meats, peanut butter or pieces of sweet cookies. Set the traps along stone walls, near rock piles or piles of logs, under old bridges or house foundations or in similar spots. If the can or wire on the trap is new and shiny, sprinkle some dirt, woods duff or old leaves over the can to camouflage it.

Once you catch a chipmunk or deer mouse and decide you want to keep it for a pet, a good cage is a necessity. The illustration here shows one that can be made easily out of "boxwood," hardware cloth and a piece of window glass, and costs about one dollar. Be sure to clean it out every day and provide plenty of food and water.

It is necessary also to provide a hiding place for the mouse or chipmunk. A small wood cheese box, with a hole cut in it will do, or an old cocoanut shell is perfect. At any rate the rodent needs a place to sleep where it feels safe from natural enemies.

Food for these pets would be about the same. Try out several foods and see which are preferred. But be sure to provide a variety all the time. Raw peanuts; nut meats; peanut butter; pieces of apple or banana, wild cherries in season, acorns, black walnuts, cracked corn, chicken feed or bird food all will be eaten. But to stay healthy the pet needs a variety of foods and an ample supply every day.

Small Mammals in the Wild

A good stunt for watching these small mammals in the wild takes a little preparation, but in the end can be a lot of fun.

First find a good place where you think there are lots of mice, chipmunks and other animals in the edge of woods, in your flower garden or on the edge of swamp. Use a piece of plywood about two feet square, or a couple of pieces of old boards, and make a platform right up against a big tree. Place the platform about two feet off the ground. The animals

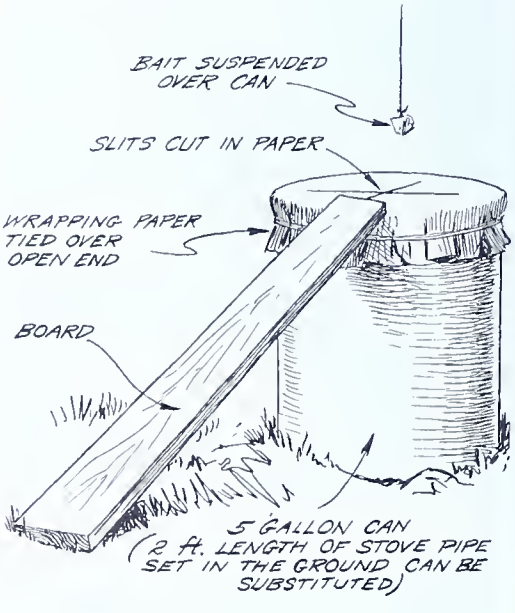


FIG. 3

can climb up the tree to get on the food platform.

Next, see if you can get a "seal beam" auto headlight bulb or any other kind of bulb and reflector that can throw a bright light when operated by a battery. Rig up the light so it shines directly on the platform from several feet away.

Now ask your father, your radio repair man or an electrician to help you get a radio reostat switch and wire it up to dry cells and the light. With this kind of a switch you can turn on the light from thirty or forty feet away, and it will light up gradually. The switch will work the light the same way the volume control works on your radio. You can turn on the light so it barely glows. Then you can gradually increase the volume till the light is bright enough so you can see the tray and the animals on it. If the light comes on all at once, it would frighten the animals. But the gradual increase in intensity over a few minutes will not frighten them and they will continue to feed.

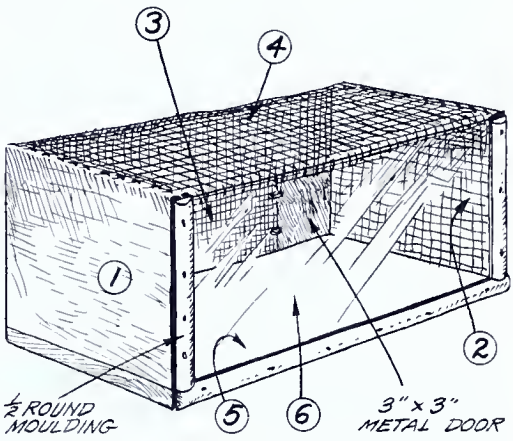
Put several kinds of bait on the platform to attract different kinds of animals. In addition to all those listed already, add some small chunks of bacon. You should be successful in seeing mice, chipmunks and even flying squirrels with a setup such as this.

Rodents and Conservation

You may be wondering by now what rodents have to do with conservation of some of the larger game animals that we're interested in. What does finding out about mice, rats and chipmunks have to do with conservation?

In the first place, there are many animals that depend upon these small mammals for food. They prefer rodents for food and generally eat them as first choice.

Perhaps you have been walking across a field and have found places that looked as if some one or some



1-2. "BOXWOOD" ENDS, HARDWARE CLOTH TACKED TO INSIDE.
3-4. TOP & FRONT—HARDWARE CLOTH TACKED TO ENDS AND BOTTOM
5. "BOXWOOD" BOTTOM LINED WITH METAL OR HARDWARE CLOTH
6. WINDOW GLASS FASTENED TO ENDS AND BOTTOM WITH ½ ROUND MOULDING. CAN BE RAISED FOR CLEANING CAGE.

FIG. 4

thing had been digging—just small holes here and there where the dirt has been scratched out. These are places where foxes or perhaps skunks, have tried to dig out a nest of field or meadow mice. If you look around more carefully you may see further tracks of these animals. Skunks and foxes may not be as valuable as furbearers as they once were, but their pelts are still worth something, and foxes do provide sport in hunting during the winter when there is not much else to hunt.

Weasels, too, live on mice largely and their pelts in winter, when they are white, are important for fur in some places. Several kinds of hawks and owls feed mostly on mice and rats and catch them rather easily.

These same animals all may eat song or game birds or raid poultry houses when they are hungry. Mice provide what is called a "buffer" food for predatory animals. That means that predatory animals will eat them first, when they can find them, instead of other animals that are more

desirable to man.

If there are enough mice to provide food for hawks and owls, the birds will not attack as many grouse, quail, pheasants or rabbits. If foxes find enough mice to eat, they will not destroy as many game birds or rabbits. Skunks will not raid nests of birds if they can catch mice more easily. Small mammals then, are important in wildlife management, and conservation technicians need to know something about what kinds of animals are present for other animals to eat, and about how many there are.

Rat Control

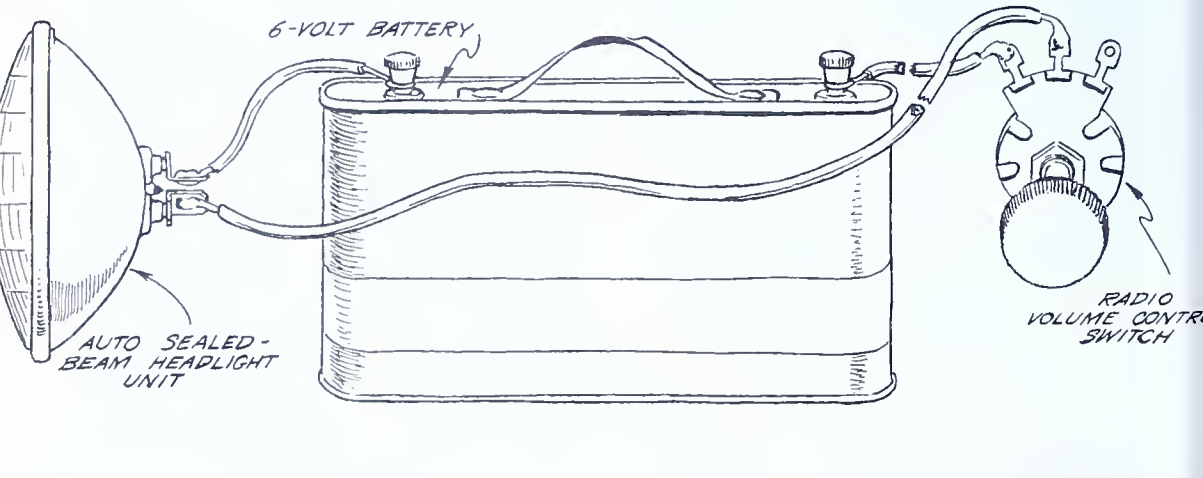
Many times, especially in cities or towns and on farms there are too many of one particular kind of small mammal—rats. There are not enough natural predators as there are in the wild to keep them under control. That's why you frequently read in the paper about barn owls nesting right in town—in church steeples, attics, lofts and such places. The owls find a good place to nest, a good source of food nearby.

It's also why you see owls occasionally flying over village or city garbage dumps. They feed on the rats that live in the dump. But there are not enough owls or even cats to really control the rats, and the rats eat or damage large quantities of food or food products.

It's a good idea to organize a rat control project in your community. F. F. A. Chapters, 4-H Clubs and Scout groups have been doing it successfully in many places as a public health and conservation project. Rats carry disease and are a menace to health. The food they destroy has come from good soil—so saving this vast quantity of food indirectly is a soil conservation project.

The easiest way to find out how to control rats is to write to the Wisconsin Alumni Research Foundation, P. O. Box 2059, Madison Wisconsin ——and ask for a kit of educational leaflets. These leaflets do two things: they show how to discourage rats around homes and farms by removing their food supply, eliminating runs and nesting places, and by making buildings rat proof. They tell how to use a new chemical warfarin to poison rats and destroy them. Write for one of these kits and start a control project in your neighborhood or on your farm.

Wherever you live—city, country or suburbs, you can find out something about small mammals. You can trap them in the country and keep them as pets in the city. You can even trap them in parks and along roadsides. They have an important place in the world of nature and it's a lot of fun finding out how they live. Try it and see.





By Ed Shearer

Plinking Makes Game Shots

THERE are around 17 million hunters in this country of ours. Of this number not more than 10 percent ever fire over a regulation target, skeet or trap range. According to ammunition companies' figures around 700 million rounds of center fire ammunition of all types are turned out per year. But over 3 times this amount of 22 caliber rim fire cartridges are produced annually. Just why is this?

The 22 caliber rim fire has been with us almost a century. It was popular from the start but nowhere near to this extent. It has always supplied the most economical form of shooting so that is not the whole answer. The truth lies in the fact the American people are not only essentially a shooting minded people but outdoor minded as well. Thus in this day of motor cars, the 5 day week and a network of roads that lead into every formally remote thicket, there is a weekly mass exodus of city dwellers. Our mountains, lakes and streams become recreation centers. This is the fertile field in which America's largest sport, plinking, was born.

It is the one shooting sport that every one from Willie, age 8 to Uncle Ezra and Aunt Clara, can participate in and enjoy. It requires no elaborate equipment. The recipe is, one 22 caliber rim fire rifle and cartridges, which can be had at a price that still leaves you next week's lunch money and a mess of tin cans that your wife will be glad to be rid of.

The plinker has more fun and learns more about shooting with a 22 caliber, than all the big bores put together. When you run across a character in the woods who seems to have an uncanny knack in placing his bullets fast and accurately in a fleeing buck, the chances are he is a long time plinker. The tin can and the empty bottle have produced more expert game shots than all the rifle ranges in the world. The reason—the average man soon tires of the long grind and concentration required to become an accomplished target shot. When he achieves a modicum of skill, he decides punching holes in a piece of paper is dull business and turns to something else.

The plinker never gets bored. Something visably happens when he gets a hit and most shooters like action when they shoot. Visit any shooting gallery in our parks or carnivals. You will find precious few paper targets. There are bells that ring when the bullseye is struck. There are moving squirrels, ducks, deer and what not, that gives a satisfying ring when hit and falls over dead. If you want to see pieces fly there are clay pipes, bustable wafers and the like. Any time some one starts shooting a crowd gathers—they love it.

Sure its fun but our shooter is getting a lot of painless instruction in hitting moving game. Those squirrels moving along in an endless row soon teaches him that he must swing his rifle with moving game, if he expects to hit. The best way to cure a piddling shot is to have him try to mow down these animals as fast as they come up. He soon finds that to

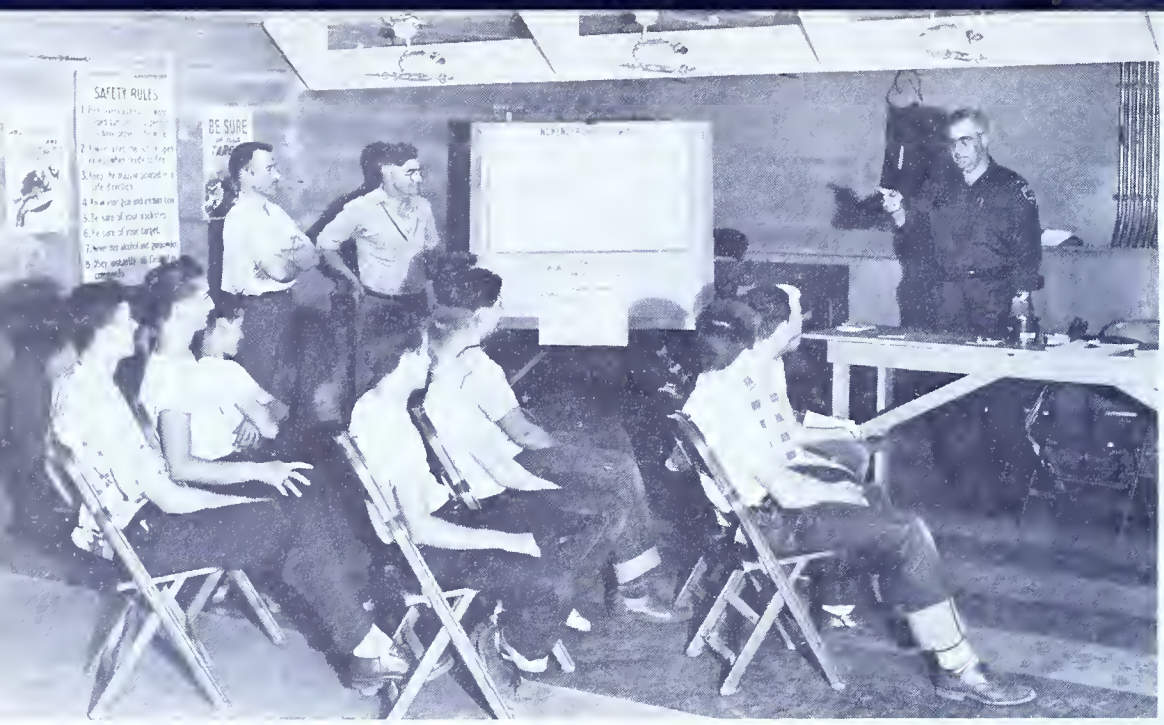


Photo Courtesy Schauble-Nelson Studios, Erie and General Electric Athletic Association

Cliff Ruth, District Game Protector, Erie, gives some young hopefuls a few words of caution about safety in the field. The boys were part of a "graduating" class who had recently completed the NRA "Hunt Safely" course under the auspices of the General Electric Athletic Association's Rifle Club. In the background are instructors Andy Pierce, club secretary, and Harvey Lapp, president. Boys graduated from the course were Bill Brown, Dick Deutsch, John Kuzmin, Jr., Bill Wakeley, C. Duerr, Dave Tomlin, Tom George, Dick George, Dave Welch, Ed Samartino, Tom Savage, Don Freeman and Ed Vaughan.

win any marbles he must quit dragging his aim. It's swing fast, get on the shot and away, right now. It's this kind of a plinker who gets his bullet into a buck when it's only one jump to cover.

Now it is not practical to lug a shooting gallery along on our family outdoor dinners or a weekend in camp, but most shots can be simulated with articles at hand. The tin can is the emblem of the order of plinkers. Most any kind of a shot can be set up with it. If you want to get fine practice for running shooting, toss a can in a swift running stream and then try to sink it as it comes bouncing down the riffles. You will do a lot of missing on this one but you will learn also. This is a good way for a shooter to keep his swing, timing and trigger squeeze tuned up. The bullet splashes on the water tell him just where he is shooting and why. If you really want to speed things up have the Missus toss three cans in at 10 foot intervals.

Another stunt that is fun for all is rolling a tin can. The one that rolls the can farthest gets the extra piece of pie. If the can stops rolling after the first shot, he is done. A sort of miss and out affair which calls for accurate shooting. The trick in this is to have the bullet hit just under the can. The plinker who does this consistently on a rolling can is the same guy who gets a fast chunk of lead into a buck before he gets into high gear.

When the rolling can palls on you try a swinging can suspended from a tree limb. When the musical tinkle of the bullets striking the can become frequent move back a little. You will soon find that the chap who wrote "distance lends enchantment to the view," was a jerk. This is very good practice prior to taking up aerial shooting.

If you want maximum action and results fill the can with water and put a high speed long rifle hollow point bullet through it. The can will jump and split wide open with water fly-

ing in all directions. Other forms of good practice are miniature deer, bear and rabbit targets made by various firms. These are divided in scoring rings according to killing areas. By putting these around at unknown ranges and firing one string of shots per man provides both sport and instruction.

Sooner or later the plinker gets an overpowering urge to try aerial shooting. While hitting flying objects looks spectacular it is not as difficult as it seems, provided you stick to reasonable sized targets. Here is how you start. Pick a large size can. Now toss it in the air a few times and watch it closely. You will note there is an instant when the can reaches the top of its flight, it seems stationary. That is the time to shoot. So with the rifle loaded you follow the can up and at the top of its flight, holding just under it you pull the trigger and the musical tink spells a hit. From then on its a question of how much you shoot. When you consistently hit one size, you can go to a smaller until you get down to pennies and empty 22 caliber cartridges. By this time you no longer wait for the rise as you can hit them coming up or down. Then you are ready to take on two or three targets in the air at one time. From there on your ambition and time must be your guide.

When it comes to rifles the plinker has the widest selection of makes, types and prices, of any branch of the shooting game. They are far too numerous to try to cover in one article. There are bolt action single shots and repeaters with tubular and clip magazines. There are pump actions, semi-automatics and lever actions. They are made in various types by Winchester, Remington, Marlin, Savage, Stevens, Harrington & Richardson and Mossberg, just to mention a few.

For boys one of the low priced single shots are hard to beat. Their accuracy is surprising and they can be had with stocks that are not too long for any but the smallest lads. In that case you do not have to ruin an expensive stock to get a fit. A single shot must be opened after firing and another cartridge inserted by hand which makes it the safest type of rifle for boys. The most thoroughly dangerous rifle I know of is a semi-automatic rifle in a crowd of boys. Once fired it is ready to fire again unless the safety is put on which boys are apt to forget.

For general plinking around camp or small game hunting the bolt action is a good bet. They can be had in the low priced bracket or the dolled up Winchester model 52 which costs folding money. If you have a yen to shoot moving targets or do some aerial shooting, then the pump action or semi-automatic will serve best. If a plinker shoots a lever action on big game, then a lever action 22 will do him the most good.

Now is the time for a word of caution. To many, the 22 rim fire because of its small report and absence of recoil seems a safe gun for promiscuous shooting. Nothing could be farther from the truth. In a level country the 22 caliber rim fire is far more dangerous than the high power rifle. The 22 will almost always ricochet while the high power bullet tends to go to pieces on impact with the ground. That warning on the flap of the cartridge box, "Dangerous WITHIN ONE MILE, means just what it says. Ricochets may travel several hundred yards and kill or wound a man or livestock. The plinker should use extreme care in his backgrounds, selecting a hillside or stream bank whenever possible.

———

The jumping shrew of Africa is said to sometimes curl up and roll along instead of jumping like a kangaroo.

* * *

The only mammal that has wings is the bat.

Training Your Beagle

By David E. Fisher

COME the hunting season and for about two weeks before, there is always a mad scramble of hunters looking to buy a thoroughly broken dog and in lieu of that, one that is well started. Some are lucky in finding what they want and many are disappointed. At our kennel we will not sell a dog to a man just a week or two before the opening of the season, for neither dog nor man have a chance to get properly acquainted.

For many years I have preached to sportsmen to buy a pup or young dog in the early spring or summer and train it themselves. They will then own a dog that is trained the way they want it. If they must buy an older started or trained dog, then buy that during the summer months (from April to September). Not only will the price be lower but they will have a chance to work the dog when the training season opens and get acquainted with it. The best bet and one I've always recommended is to buy a pup, or young dog ready to start, and then train it yourself. By the time hunting season rolls around you will be in better condition and will have a dog that will understand you and you will also understand the dog. You can buy a pup at any age from 10 or 12 weeks up.

A pup that is four months to five months of age can be started with his first lessons in the field. First lessons are to prevent gun shyness and car sickness and these have been covered in previous articles.



The next step is to take them afield and let them get their kindergarten education by just smelling everything they run into and this subject was covered also in a previous article.

Now we get down to actual work. One of the first things in the field is to get them used to all kinds of fences—wire, rail, stone walls. Take a wire fence or rail fence and crawl over where the pup can't get through. It will howl for you to help—but all you do is walk up or down the fence line and let them follow until it finds a place it can crawl through. That way they learn to find the holes in a fence.

The next thing to teach them is water. Take them to a small stream where the current is not swift and where it is not so deep that they will loose their footing, and also where they can get up and down the bank—where they can wade without swimming; this will teach them not to be afraid of water.

To teach your pup to stay with you and hunt for you, after you have had it out a dozen or so times, hide from it and let it trail you. It may run around all excited and may howl, but eventually it will trail you and find you. The first few times we do this, we let them search and howl awhile and then walk up to them from another direction. This assures them that you are not running away from them.

Beagle pups usually begin to trail at about 5 or 6 months, altho some may start earlier and many do not start until they are much older. We have had hounds that never got started until they were 1½ to 2 years old and they turned out to be wonderful dogs. We never go too much

for the early starters as they tend to become over-anxious and too noisy and mouthy, altho some of the late starters do not always make intensive hunters.

When your pup is old enough to begin to trail, start taking him out mornings or evenings. In the case of a started dog the same thing applies. The oftener they get out, the better hound you will have. The man who takes his hound out *every* morning or every evening, in any and all kind of weather, is the man who is going to have a really top notch dog. Even if you have a trained hound, once the training season opens he should be taken out at least three evenings a week.

Take your pup to a good rabbit patch where you know you can find them. Move about slowly—walk a dozen steps and stop for a minute or two, letting the pup hunt around and do his own investigating in his way. In the meantime you keep your eyes open to spot a bunny either in the nest or in the open. When you find one, call the pup to you—if he does not come walk over and pick him up —then advance slowly toward the bunny. Advance very slowly, holding your pups head in such a manner that it will be pointed toward the rabbit. If it is in the nest you can often get within a few feet of it before it will jump out. As soon as it jumps out set your pup down quickly but easily (do not drop or throw) and let him take after the bunny with a sight chase. You stand pat where you are. When he comes back pat him a bit and encourage him with a bit of sweet talk—walk to where you saw Mr. Bunny last and stand there for 3 to 5 minutes. The pup will smell around and hit the scent and take more interest in trailing. After he develops this interest in trailing you will start to go ahead with him.

You may have to do this a dozen or more times before your pup begins to trail and open up and give tongue . . . but as soon as he does, then you start letting him find and jump his own rabbits while you are moving around slowly in the brush. This will teach him to search and find his own . . . the incentive to search and start his own is a prime requisite in a good dog.



Hal Harrison Photo

When we are starting a young dog, and he has started trailing, we always follow him on the trail. First, to give him confidence so that he will know he is not going to be left and second, so that when he loses the line (or trail) that you can help him find the line. He will need such help when first starting. After he is running and trailing and using his mouth fairly well, then let him do his own work and unravel the line himself.

When your pup is hunting well, then it is time to take him out with another dog—a dog that is not too fast so that he does not outfoot your pup and discourage him—and this will teach him to "hark in" to another dog readily. This is necessary in case you ever wish to run him in a field trial.

After your pup is trailing good and has reached the point where it is not afraid of being lost from you—is a bit woods wise and unafraid—then you stand still when he starts the chase, as the rabbit will in most cases

circle and come back to the spot where it was started, or near it.

When you jump a rabbit, call your pup in and walk and show him the track a short distance from the nest . . . (not the nest)—point with your finger to the line or track and guide him along the line for five or ten feet to show him the direction the rabbit started off. Then use some command, to him, in a low voice—such as "Get 'em"—"Find him," etc., but always use exactly the same words. He will soon catch on to what you mean. You just have to be patient . . . in fact patience is the important thing in training.

Bear in mind that all dogs need a lot of solo work to make them sure and independent, but they must be run with another dog occasionally so they will "hark-in" in case they are being run in brace or pack.

We carry a .22 with blank cartridges with us in the field AFTER the dog is running well—and then when he jumps a rabbit we immediately let off a shot into the air. (Around the kennel at feeding time we use a toy cap pistol at first and that will suffice for the kennel training). Now this is important. When the season opens and you take your dog out for the first time, do not go with a crowd; take him by yourself. When he starts the rabbit—shoot it—but be *sure* when you shoot that you are going to get it. We always wait until the rabbit is well ahead of the dog so that we are not shooting close to the dog and then we let it lay and let the dog come up and find it and chew and maul it, then we walk up and pet him and encourage him.

If you have purchased a young or started dog (partly broken) do not take him out and do a lot of shooting over him as this can easily spoil him. Always use a little common sense and good judgment. Take things easy. Also, never whip a dog in the field—they will tend to hunt squirrels and pheasants when they are young. To prevent this, take them where you will find rabbits and rabbits only and after they have run them for awhile they will not be likely to run any other game. Never discourage them from trailing grouse or pheasant as this will not harm them in their running of rabbits.

When starting a pup you will find it of advantage to take them out evenings, just before dusk (where you know there are rabbits) and stay out there anywhere from an hour at the minimum to 3 or even 4 hours, letting the pup explore where it will. He will run into where a cottontail has been feeding and will get scent that will tickle and please his scenting ability and he will try and get as much of it as he can. When he seems to be smelling in one spot, just stand still and let him get the benefit of all this scent he can get . . . when he moves, follow him, slowly without crowding or pushing him. Around a young growth of pines (if feed is near) or in and around clover and alfalfa patches are places to find bunnies.

All dogs have different dispositions. You must learn to judge them yourself and figure out what should be done. All dogs have faults of one kind or another. Training them is just a matter of trying to correct these faults. Occasionally you will get a hound that will never make good, no matter how you work with them or what you do for them. If you get one like that don't be discouraged, sell it to someone for a family pet and get another. When you are out in the field, take a stick about 4 feet long and work with your dogs and let them know you are trying to help them to hunt rabbits too and they will stay and hunt with you. So Good Luck to you and many happy days training and hunting with your beagle—America's Greatest Hunting Hound.

Foxes Can Fool You

By Larry J. Kopp



Lynwood M. Chace Photo

IN fox trapping there are many provocative experiences which might well lead a trapper to accuse foxes of being unreasonable. But in this particular instance we are more seriously concerned about that mysterious something which motivates a fox.

Because of the fox's exceptional shrewdness, it is most important that a trapper exercises diligent care in order to make certain that no human or other foreign odors are left at a set. And the trapper must also make certain that the finished set looks natural. This is all well and true, but the question seems to be, just how does a trapper go about making certain that no foreign odors are left at a set; or making certain that it looks natural.

In order to understand this whole thing clearly it is first of all necessary to recognize that foxes do not think or reason in the same manner as do humans. Instead, foxes are guided by what we call instinct.

One definitely important thing which is not so well known generally and often overlooked by trappers, is the fact that foxes are by nature exceptionally timid. Therefore, unlike most other fur animals, foxes are instinctively alarmed and skeptical about anything new or unusual. In this connection they obey their inherent instincts and shy away from unfamiliar things.



The fox's well developed and highly sensitive nose, eyes, and ears are characteristics which aid him in detecting unusual odors, objects, and sounds. But these three do not by themselves make the fox a cunning animal since all other common and clumsy animals also possess the same characteristics. The only difference is that these common animals are not so extremely shy or timid.

Although there have been times when it did not seem true, foxes are particularly afraid of human beings. Thus, like the equally shy mink, they are seldom seen by people. Naturally there are frequent exceptions to this, but ordinarily foxes make every effort to avoid being seen by humans.

In other words a fox is really difficult to catch because he is so timid. When the trapper can fully understand the great importance of this peculiar aspect, it becomes less and less difficult to make a fox set which will take foxes with fair regularity.

Our first step then, is to avoid human or other foreign odors at a set. By foreign odors we mean any odor which does not normally appear at a trapsite, such as cigarette ashes; tobacco juice; gasoline or oil of any

sort which may unknowingly come in contact with footwear while walking along a road; and in similar fashion odors from the barnyard or poultry house. These are all foreign odors insofar as your fox set is concerned under ordinary circumstances. However, when a fox set is made in a field which has been top dressed or mulched with manure of any sort by the owner, it is naturally not considered as a foreign odor since it appears over the entire field; or at least over a large portion around your set. At this point it must be noted that it is not always a good idea to make sets in cultivated fields which have been so treated by the farmer, since much odor will cling to your footwear and will be thus carried to another set where it would be foreign.

It is true, of course, that footwear can be cleaned in nearby water if it happens to be handy. For footwear, rubber boots of knee length, or arctics are the best for fox trapping. Such boots, when washed frequently in clear running water will not leave any odor as would leather shoes. Rubber footwear can also be washed with soap and warm water when necessary, then rinsed well in clean cold water.

Some trappers use what they call a kneeling canvas. This is a large clean piece of canvas or other strong cloth which is spread out on the ground for kneeling while making a set. The purpose behind this idea is to avoid having human odor at the set. However, it is not necessary to use such a kneeling convas when the trapper wears rubber footwear as described. Instead, the trapper sits on his haunches so to speak, and in this way no part of the body should come in contact with the ground. This is a matter of personal opinion, and both methods are good.

In addition to rubber footwear, the trapper must also wear rubber gloves when making a fox set. These, like footwear, should also be washed frequently in clean running water. Clean canvas gloves are also satisfactory but cannot be kept as perfectly clean as rubber or rubber coated canvas gloves.

Although it is understood that wearing rubber gloves is important, there seems to be some question as to just when they should or should not be worn. A good policy is to wear gloves when handling the trap or trap pan cover, in any manner; when scooping up soil to make a trap bed or filling the dirt sifter; and when handling the sifter. All other tools with a handle, such as your trowel, scratching tool, hammer or mallet, etc. can be handled without wearing the gloves. In addition, gloves should not be worn when handling bait or lure jars.

Some trappers make it a policy to handle everything except lure and bait while wearing gloves, but this has several disadvantages. For example you may visit one of your sets and find that it needs a few changes which can be made with a few strokes of the trowel. In such instances it is a nuisance to always put on your gloves for a few seconds work.

Most likely you will unknowingly grab the needed tool in haste and forget to put on the gloves. Thus you will in due time leave human odor at your sets by using a gloved hand to handle the trowel which you also handled with bare hands. This is particularly true on days when warm weather causes your hands to sweat. Not only that, but on warm days you are more likely to overlook the use of gloves in such cases.

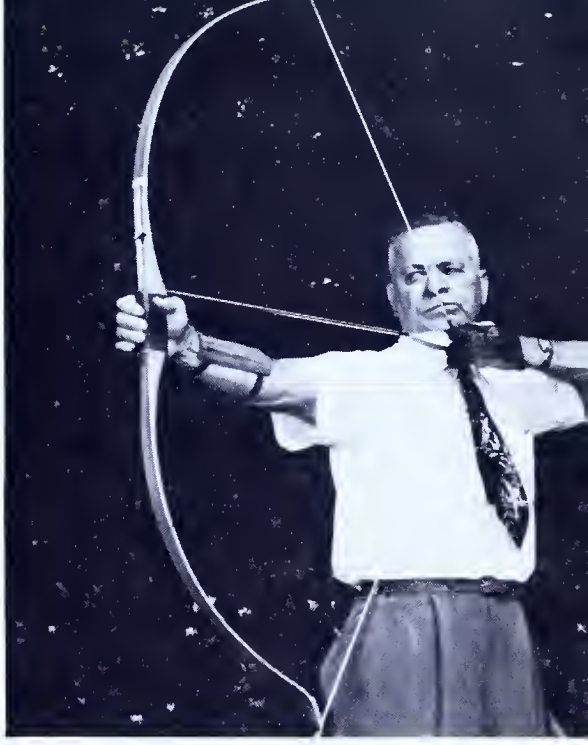
It should be remembered that since you are using various tools with bare hands, they should be placed into the pack basket when not in use. In the case of your trowel, it can be stuck in the ground until needed again to complete the set. Never make the mistake of laying such tools upon the ground.

Shooting Form

By Tom Forbes

PART I

PREPARATION



ONE out of every four deer killed by archers in Pennsylvania last season was bagged by an archer who was hunting with a bow for the first time. It is admitted that the element of chance can favor anyone of us but in the long run success in the hunt will come to the hunter who has mastered the technique of shooting a bow and is able to send an arrow to a chosen spot. No record is available of the number of deer missed by the more than 10,000 hunters who bought licenses for the special archery season. Nor is it possible to break down the total to show the number of skilled archers who lacked the necessary hunting skill to bring them within bow range of a legal buck. Nevertheless from a personal survey the conclusion is inescapable that poor marksmanship is primarily responsible for the negligible number of deer killed. I do not mean to infer that a skilled hunter who is also an expert field archer can be certain to bag a buck. It would be nice if such were the case. Unfortunately examples could be cited where the exact opposite is true. The unexpected and the unpredictable are part of the sport of deer hunting.

Again referring to the record the ratio of bow hunters to deer killed in the 1953 season was about 1 : 125. Set this off against the ratio of 1 : 340 in the '52 season and it is evident that the bow hunters materially increased their chance of bagging a deer in the past season.

Eliminating chance, there are two principal factors which govern a successful hunt. The first is the ability to stalk a deer, an art seldom practiced by the rifle hunter, and the second factor is the marksmanship of the bow hunter. Of the two the second is the easier to acquire and is the subject matter of this article.

Ability to hit a chosen mark with reasonable consistency with the first arrow is an acquired art and a goal that is within reach of every archer provided he is willing to learn the technique of shooting a bow. A club publication recently carried the following statement: "The average man feels that he has to select a heavy bow in order to prove his manhood." Whatever the reason, too many novices have equipped themselves with heavy bows which are a definite handicap to them in their efforts to learn to shoot. Deer are killed with thirty-five pound bows and the average distance from which deer were killed in Pennsylvania last season was thirty-five yards. The wide spread



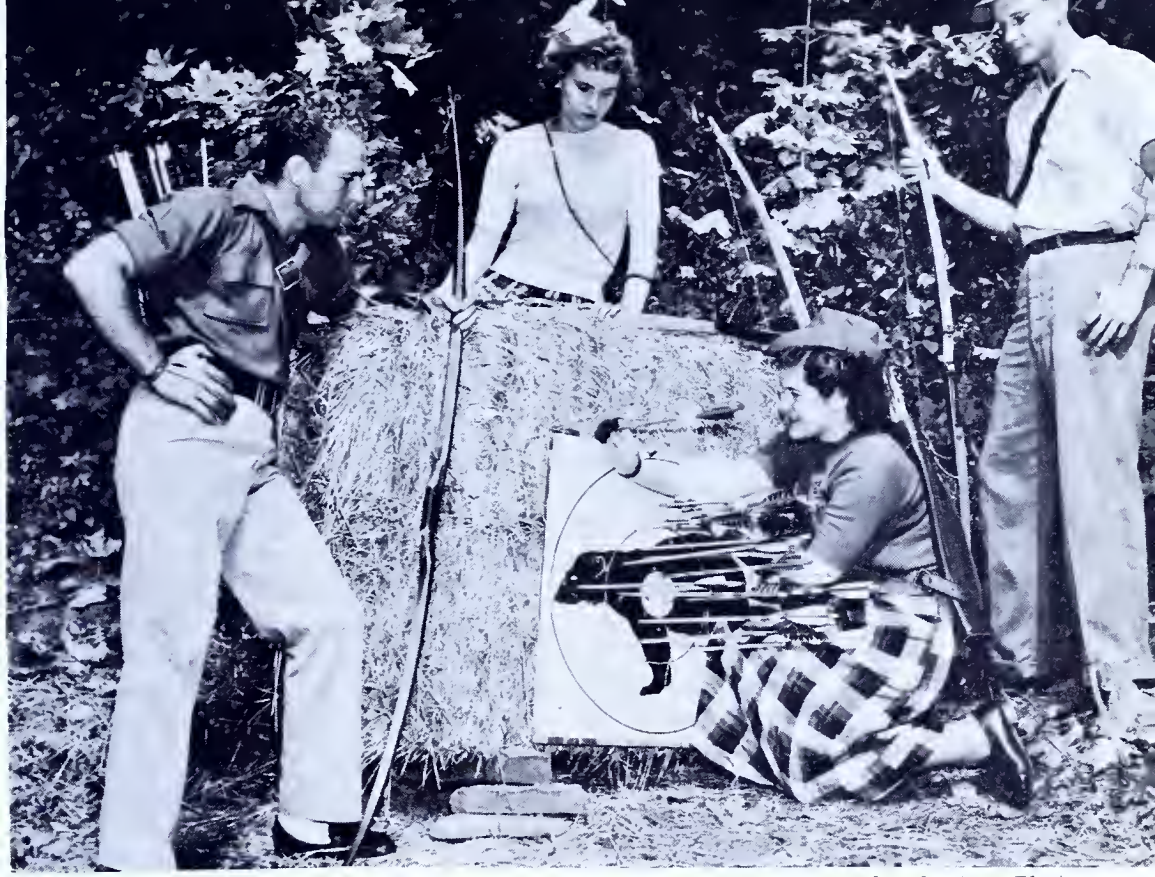
opinion that a hunter must be equipped with a bow which draws upward of 60 pounds has accounted, in my opinion, for the poor markmanship of the average bowman encountered in the hunting field. It is not contended that an expert bowman cannot shoot accurately with a 60 pound bow. To the contrary he will consistently shoot better with a heavy bow at ordinary ranges.

It is maintained however that the novice will find it extremely difficult, if not impossible, to develop proper shooting form and spend the hours of practice necessary to perfect that form unless he uses a bow which he can draw and hold without extreme effort. Good form is gained through practicing correct procedure at all times. Technique is the foundation on which ability as a marksman may be acquired and technique can be studied by observing an expert bowman on the field course, seeking personal advice and instruction from these experts and studying and applying such printed instructions on shooting the bow as you are able to obtain. Just shooting is not enough. Good form is the result of thoughtful application of approved shooting methods. Unless you can learn to repeat each movement in exactly the same manner every time you release an arrow you cannot expect to register hits consistently on the target. A bow used correctly is an accurate and deadly weapon and its effectiveness is limited only by the skill of the individual hunter. Accuracy is the end product of good form plus plenty of practice.

In the previous article the beginner was advised on suitable equipment. The next logical step is to assemble the necessary tackle and join your local archery club if one is located in your vicinity.

For protection the archer wears two indispensible items. A leather arm guard is worn on the inside of the bow arm. It protects the forearm from being injured by the bow string when an arrow is properly released from the bow. Unless the forearm is protected, the bow string will slap the forearm just above the wrist with painful consequences to the archer. The first three fingers of the drawing hand are protected by a shooting glove or a leather shooting tab. Without this protection the finger tips will blister quickly and make shooting painful if not impossible. As an aid in toughening the skin apply "Tincture of Benzoin" to the finger tips before you start to shoot. To help provide a smooth release, which is to archers what the trigger squeeze is to the rifleman, dust the glove or tab with a good grade of talcum powder. The shoulder quiver is losing favor with the men who hunt with the bow. Among the criticisms are, that it makes a brush catcher out of the arrow shafts, that it is noisy, and that too much movement is necessary to draw an arrow from the quiver in event a miss does not stampede the game. In it's place the hunting fraternity is using either a bow quiver or a belt quiver. The bow quiver as its name implies provides for carrying extra arrows attached to the bow and the belt quiver is merely an oversized target archers quiver, cylindrical in form and attached to the belt by a strap.

The archer dresses within certain prescribed limits for comfort. The special archery deer season in October in Pennsylvania permits light clothing. Shoes should be sturdy and comfortable. Avoid rubber footwear at this season of the year as it will be too warm for comfort. The tee shirt is universally worn and approved by all archers. During the fall hunting season a light sweater can be worn as a second garment during the early morning hours. Loose fitting upper garments which are excellent protection in cold weather are a problem to the bow hunter. When an ar-



Hal Harrison Photo

Practicing at Al Gigler's field course in Beaver County are, left to right: Frank Martin, Ginny Bednarski, Anne Bizic, and Bill Pelkofer. This group of field archers displays several ideal combinations of hunting clothing and equipment.

row is released the bow string passes across and close to the chest and shoulder of the archer. Sport shirts with flaring open collars and loose half length sleeves or ties and collar tips are booby traps. A slight breeze will blow a collar tip, loose sleeve, or tie end into the line of movement of the bow string and the arrow will be deflected from the mark.

Let us assume that club facilities are not available within a reasonable distance from your home and that you have set up your own butt consisting of at least three bales of three wire rye straw weighing not less than 100 pounds per bale and have pinned a target in position.

As the beginner can expect to miss the butt frequently on his first attempts at shooting, the grass in back of the butt should be cropped very close to facilitate locating arrows. This may seem an unnecessary refinement to the beginner but arrows which miss the butt will slide along the turf and often are covered throughout their entire length even though the grass is short. It is a wise novice who marks the spot where an arrow strikes the turf and if shooting alone proceeds to the spot immediately to retrieve the arrow. This procedure will save a lot of time which otherwise will be consumed in the search for missing arrows. To retrieve an arrow when the feathers are embedded in the turf, locate the tip of the arrow and with the thumb and forefinger draw it forward in the line of flight without bending the shaft. Withdrawing an arrow in this manner will prevent damage to the feathers.

Step off about twenty paces from the butt for your first practice shooting position. At this time it is well to remember to attach the arm guard. If you forget this detail you will be reminded sharply and painfully when the first arrow leaves the bow.

Today's bows are commonly supplied with a double loop string. To string or in the jargon of the archer, brace the bow, place the larger loop over the tip of the upper limb of the bow and let it slide down the limb. The upper limb is easy to identify on bows having a built in arrow rest. If your bow is not so equipped it can be identified by the arrow plate. This is an inlay at the point on the upper limb where the arrow shaft slides as it passes the bow in flight. This point is located immediately above the handle or grip. Place the other loop of the bow string carefully in the nock or groove at the tip of the lower bow limb and with the left hand slide the first loop up the upper limb until tension in the bow string holds the lower loop in position. Now stand the bow upright in front of your right foot with the string to your left. Step between the string and the bow with your right foot. Place the lower limb tip across the instep of your left foot and bring the belly of the bow just below the handle against the back of your right thigh. Now grasp the upper limb with the right hand as near the tip as you can but just below the present position of the upper loop. Thrust forward with the right arm. As the bow bends, using the thigh as a fulcrum, slide the upper loop into position with the fingers of your left hand. This is the common method of bracing a heavy bow and the easiest method of bracing the recurved bows in common use today. To unstring the bow exert pressure in exactly the same manner and with the thumb and forefinger of the left hand slip the loop of the bow string out of the upper nock and let it slide down the upper limb of the bow.

To give long and satisfactory service a bow string should be reinforced for wear at the point where the arrow and drawing fingers come in contact. This operation when performed by the archer is called serving the string. It consists of waxing a sufficient length of number 8 linen thread to serve about four inches of the bow string. Wrap the end of the thread under at the start and again at the end of the operation. Draw tight and cut off any surplus with a razor blade or knife, but cut away from the string lest you sever the newly served string.

For the Best in Outdoor Reading

PENNSYLVANIA GAME NEWS **SUBSCRIPTION ORDER**

Please renew my subscription for GAME NEWS as follows:

$1.00 per year $2.50 Special Rate for Three Years

Name .....

Street or R. D. .....

Post Office .....

(Make check or money order payable to: Pennsylvania Game Commission)



THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrock, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

OUTDOOR CODE

BOY SCOUTS OF AMERICA

As an American, I will do my best to:

BE CLEAN IN MY OUTDOOR MANNERS

I will treat the outdoors as a heritage to be improved for our greater enjoyment. I will keep my trash and garbage out of America's waters, fields, woods, and roadways.

BE CAREFUL WITH FIRE

I will prevent wild fire. I will build my fire in a safe place, and be sure it is out before I leave.

BE CONSIDERATE IN THE OUTDOORS

I will treat public and private property with respect. I will remember that use of the outdoors is a privilege I can lose by abuse.

BE CONSERVATION-MINDED

I will learn how to practice good conservation of soil, waters, forests, minerals, grasslands, and wildlife; and I will urge others to do the same. I will use sportsmanlike methods in all my outdoor activities.



PENNSYLVANIA

Game News

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION



Q 58.34
1,6

SEPTEMBER 1954 10 CENTS



THE STORY BEHIND THE COVER

A KEEN nose, speed and style, and an inborn desire to please its master—that's the Labrador Retriever. The successful music of a properly-used duck caller, the artistry of well made decoys and blind, ducks pitching in, and a well-trained dog to bring back the cripples as well as the clean kills—that's waterfowl hunting at its best. And that's the story behind the dog and the duck on this month's cover.

Although Labradors are usually black as midnight, the yellow version shown here is not uncommon. The standard Labrador is heavy-set but light-footed, exceedingly active in the water and on land. His short, sleek coat protects him from ice, mud, or brush. Males stand about two feet high, females slightly less. Labradors in good working condition weigh between 55 and 75 pounds. The eyes, set in a wide skull, should be of medium size, with brown or black the preferred colors. The jaws should be strong, the nose wide with well-developed nostrils.

Actually, the ancestors of this breed were native to Newfoundland, rather than Labrador. The only known connection with Labrador is that fishing boats which first brought the dogs to England often put in there with their catches of fish from the famous banks of Labrador. Early in the nineteenth century the Second Earl of Malmsbury arranged to have a number of these dogs imported for his kennels. Later, the native stock gradually died out in Newfoundland because of a heavy dog tax and an English quarantine law put an end to further importations. But an almost undiluted line of Labradors survived at the Malmsbury kennels, the breed finally being recognized officially by the English Kennel Club in 1903.

Not until the late 1920's and early thirties did Labradors begin to make their American debut. The first licensed Labrador trial took place in 1931 near Chester, New York, with 16 dogs competing. Since then, the Labrador has steadily increased not only in numbers but in quality. No higher commendation for their ability as hunting dogs can be given the Labrador Retrievers than the record they themselves have made in retriever trials. From 1931 through 1947 they won more first places and more total places than any other competing breed. In recent years these dogs have even been used with great success in upland game hunting, often coupled with pointing breeds in a combination that can't be beat. The Labrador's ability in the field or duck blind has won him a warm spot in the hearts of many American hunters—his good nature and gentle disposition have equally endeared him to the sportsman's wife and children.

In a sport where the crippling loss often runs as high as one bird winged but lost for every four cleanly killed, the Labrador Retriever is not only a fine canine hunting companion—he's a definite conservation asset!

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Tom L. McDowell .....Bradford

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 9
September, 1954

CONTENTS

Whistling Wings for Tomorrow 4
By Bob McGill
The Pennsylvania Cooperative Wildlife Research Unit—Organization 10
By Ward M. Sharp & Robert G. Wingard
Memories of a Pennsylvania Market Hunter 17
By Albert M. Armstrong & Paul Matthews
The San Juan Rabbit 20
By Roger M. Latham
Modern Johnny-Appleseeds 26
By Johnny Mock
Field Notes 28
A Sportsman's Map of Northumberland County 31
Why Field Trials 35
By Horace Lytle
A Brief History of the Indian Hunter 41
By John Witthoft

*

Cover Ektachrome
By
Ralph Cady

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Editorial . . .

Whispering Wings

THE whisper of waterfowl on the move . . . the lonesome cry of a single, calling for company . . . decoys bobbing peacefully on rippled water . . . an autumnal dawn along a quiet waterway or misty marsh . . . the cramped feeling only a duck blind can give or the tense anticipation as a Susquehanna sneak-boat silently steals the last few feet . . . the split-second when birds flare, the supreme test of a gunner's skill . . . the long retrieve in ice-cold water, perhaps by a dog showing devotion to duty far above that found in any other type of hunting . . . picking up the rig under a wintry sunset . . .

That's waterfowl hunting for you!

And for a growing number of Pennsylvanians, this age-old sport has cast its magic spell. No other form of hunting tests a man's skill, his knowledge of the birds he seeks, or his physical prowess more than that found along the flyways. Hunting ducks or geese is a real challenge as well as one of the outdoors' greatest thrills.

To those who already know the pleasures and sense of satisfaction in a good rig of decoys, a well-trained retriever, or a skillful approach by sneak-boat, no conservation effort is more appreciated than that to bring back the ducks. For those who have not as yet realized what they have been missing, Pennsylvania's waterfowl horizons are steadily expanding.

While Pennsylvania may never compare with the continent's best waterfowl areas, her handicap of limited natural environment is gradually being overcome. Duck stocking, development of small marshes and ponds, years of effort on the great Pymatuning, woodduck nesting boxes—all have played a part in providing more and better waterfowling in this Commonwealth. Despite increased gunning pressure, habitat destruction by an ever-expanding civilization, adverse weather conditions, a lack of natural lakes and marshes, the ducks have been brought back in one of conservation's most successful crusades.

FOR THE FINEST IN OUTDOOR SPORT, THE FLIGHT WILL SOON BE ON!



Whistling Wings For Tomorrow

By Bob McGill

Outdoors Writer, Tribune Newspaper, Meadville



A Game Commission duck program which began in Crawford County four years ago is expected to provide Pennsylvania duck hunters with some of their finest gunning this Fall.

Close to 8,500 young mallard ducks were raised at the Commission's duck farm on State Game Land No. 213 in Crawford County this Spring and early Summer.

Banded and released in marshlands and waterways all over the Commonwealth at the age of five weeks, many of them will return to the waters where they were "planted" during the coming migration South.

In addition to increasing those whistling wings as they circle and come in to light this Fall, the program means many of the survivors will be returning to Pennsylvania waters next Spring for breeding.

The statistics are proving that a large percentage of the mallards raised at the duck farm return to mate and raise their broods in waters of the Commonwealth where they were released.

Robert Latimer, Game Commission waterfowl coordinator in charge of the duck farm's program, reports that about 14 per cent of the bands placed on these Commission-reared ducks are returned to the Commission for tabulation. This information gathered from returned bands is invaluable to both the Game Commission and the U. S. Fish and Wildlife Service in administering waterfowl programs.

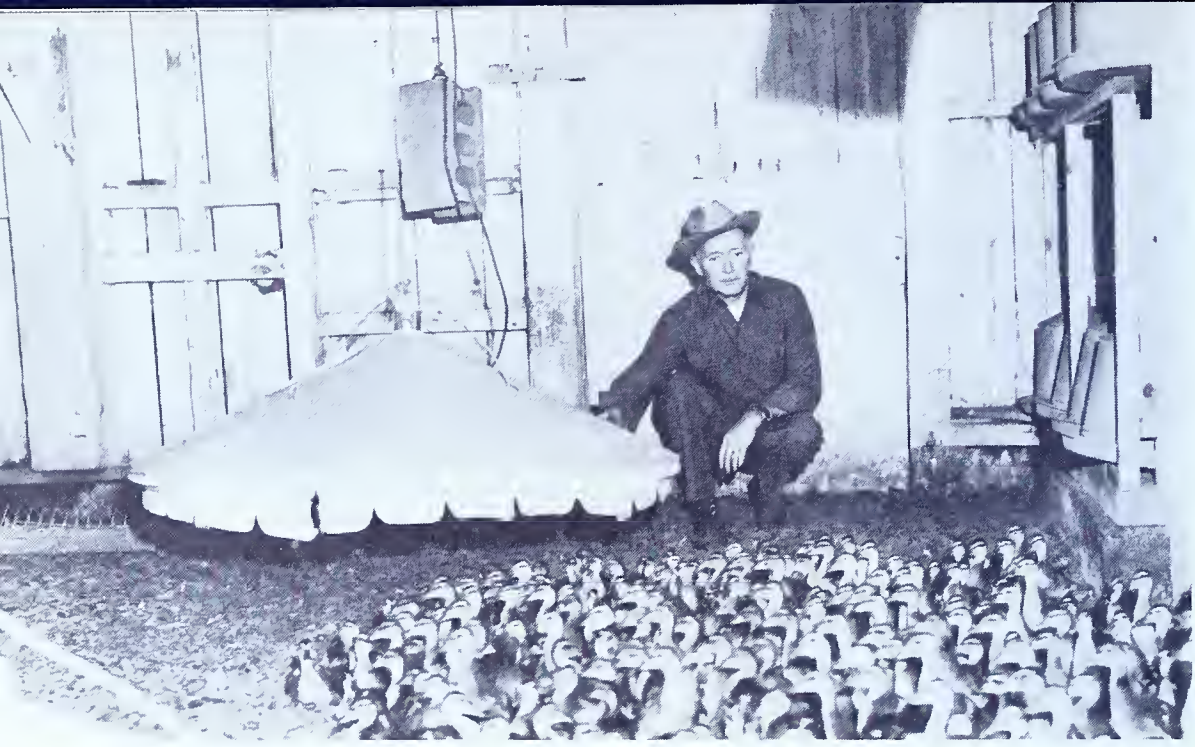
The duck farm, located west of the borough of Geneva and along the big marsh of the Conneaut Lake outlet, has been the center of a rapidly expanding duck program since 1951.

In 1953, 7,100 mallards were raised, banded and trucked out to other parts of the Commonwealth for liberation.

Photo by Reed McCaskey, Photo-Graphic Arts

The Game Commission's duck "farm" along the Conneaut Lake outlet marsh near Geneva is shown in an air view.





PGC Photo by Bob Parlaman

Bob Latimer, Commission Waterfowl Coordinator, inspects two-week old ducklings raised at the farm.

Long-range plans call for the holding of a number of mature mallard hens at nearby Pymatuning Lake Game Refuge for breeding purposes.

Held in the refuge's marshland areas, the hens will mate with wild drakes coming into the refuge in a process similar to that which has produced the Game Commission's fine wild turkey strain for stocking.

The offspring of such a breeding program will produce a duck which is "three-quarters wild" and better suited to survival, Latimer points out.

Officials at the farm sexed day-old mallard chicks as they came in to the duck farm for the first time this year and are keeping 250 as a nucleus of this breeding stock.

At the duck farm itself, the 1954

PGC Photo by Bob Parlaman

Commissioner H. L. Buchanan, Franklin, on the left, and Henry Pratt, propagator at the duck farm inspect ducklings being raised for release this year.





Six-week old ducks being herded or driven into catching pens for tagging and subsequent shipment for release.

duck season began late in March when the first mallard ducklings, some only hours old, arrived.

When the program was in full swing several weeks later, there were as many as 5,000 of these youngsters quacking around their respective pens on the big hillside farm.

Newly-hatched chicks are first placed under low-hanging brooders in the farm's barn. The barn floor, completely covered with peat moss to prevent chilling of the chicks, is separated into various "corrals" to keep the little mallards in separate age groups.

After going through several "corrals," the chicks find themselves in a fenced-off section by an open side door. Outside the door is a small cir-

Commission waterfowl experts catching, tagging, and crating ducks for release at selected points throughout the State. All ducks reared under this major program are banded and should be reported by sportsmen bagging them during fall hunting seasons.



cular pool—their first water. The shallow pool was created from the foundation of a silo and it soon becomes headquarters for the web-footed youngsters.

Their first encounter with the water is hilarious. They look at the "thing" with wonder and then topple in, pushed by the mass of brothers and sisters behind them. After that, it's just a continuous splash in and out of the pool.

They spend their third week in this in-and-out pond existence and then move to two larger ponds on the lower part of the farm. For about two more weeks they puddle about these ponds, fattening themselves and growing at a surprising rate on the Commission's special duck feed.

Next step is the corraling—by canoe—of these older mallards, the banding and the truck trips to Pennsylvania waterfowl areas. Latimer, Henry Pratt who is stationed at the farm, and other Game Commission officials were uncrating chicks and crating and shipping maturing mallards from May until the middle of July this year.

Since the mallards fly when they are about eight weeks old, their release on Pennsylvania waterways comes just before their flight days and in time for them to be able to escape wild predators.

A perfect example of the homing trait in these Commission-raised ducks was the return of "Sally" to the Crawford County duck farm.

She was one of five deserted wild duck eggs Meadville area Game Protector George Keppler put in charge of a jungle fowl. After the hen hatched and reared "Sally" and her brothers and sisters, she was banded and released in the adjoining marsh. Then when the winter winds began to whistle, "Sally" and her boy friend headed south. Keppler and Latimer were at the farm last Spring when two mallards circled and came in to the farm ponds. One was "Sally" but the other was a wild drake, her new boy friend! Sally hatched in the vicinity and showed up with 8 ducklings.

The Conneaut Lake outlet marsh which borders the duck farm is becoming the site of another Crawford County wildlife project. Gov. John

PGC Photo by Bob Parlaman

Members of the Farrell Sportsmen's Club, Mercer County, inspecting ducks being reared at the farm. These young ducklings are getting their first experience at swimming.





Game Protectors release ducks raised under the Commission's waterfowl program at suitable locations throughout Pennsylvania. Many of them will return to these sites during future migrations.

S. Fine dedicated a dam on the outlet's channel June 25, signaling the beginning of work on a 550-acre low-level lake along the marsh. By controlling the water level of the joint Game Commission-Department of Highways project, officials will provide a waterfowl stop covered with natural food—another prize hunting area for Pennsylvania hunters.

In still another waterfowl "first" in that Northwestern Pennsylvania county, Game Protector Ray Sickles of the Pymatuning area is in the midst of an important goose raising program, which is also under Latimer's direction.

Started in 1953, this program had 16 mated pair of Canadian geese early this year. (Geese, who mate for life, must be mated pairs for successful breeding). By next year it is hoped to have 30 mated pairs or more in all.

Since geese do not mature until they are about 4 years old, they must be held for three years before mating, another handicap in the program.

Although its beginning appears to be long and difficult, this goose program may be another Commission step toward better hunting in the near future.

Canada geese and goslings make their way to water in a new goose rearing program being conducted by Game Protector Ray Sickles at the famous Pymatuning waterfowl refuge in Crawford County.



Three Cents for Conservation

As a duck hunter and sportsman, chances are increasing each year that sooner or later, YOU will bag a banded bird. While the 14% return of information about the thousands of ducks and geese banded in the Game Commission's waterfowl restoration program is encouraging, it is believed many, many more bands are being found but not returned because of ignorance or just plain procrastination.

If YOU should bag a banded duck this fall (or see one a friend may have shot), BE SURE to turn the band over to any Game Protector or mail it to the Game Commission's Waterfowl Coordinator, Robert E. Latimer, Muncy, Pa. If band is marked "F & W S", mail it to the national "clearing-house" for such information—Bird Banding Office, Patuxent Research Refuge, U. S. Fish & Wildlife Service, Laurel, Maryland.

Flatten out the band and attach it to your letter with scotch tape or adhesive tape. If you would like to have it later for a souvenir, say so and it will be returned. Give in the report the exact date, the location, and the manner in which the bird was obtained (whether it was shot, found dead, etc.) Print your own name and address clearly in the letter. In return you will get a complete report about your bird—species, date and place it was banded, and the name and address of the bander.

PGC Photo by Bob Parlaman

Game Protector Cliff Ruth checks a hunter with a banded duck he bagged during the 1953 season on Presque Isle, Erie. Band records showed this bird had been released previously under the Commission's waterfowl rearing program.





The Pennsylvania Cooperative Wildlife Research Unit-Organization

Ward M. Sharp and Robert G. Wingard

PART I

WILDLIFE management and the wise use of our wildlife resource had become a matter of national concern by 1935. Prior to this time attempts to conserve game and provide additional opportunities for better hunting and fishing had been made largely by hit or miss methods with little basis in fact. In efforts to provide more hunting we had progressed through the period of game laws, intensive predator control, indiscriminate stocking and wide-spread refuge systems. Finally it was realized that something very fundamental was lacking in this approach to the problem. It became evident at this time that there were relatively few facts upon which to base a sound program of wildlife management.

The Cooperative Wildlife Research Unit Program was initiated in 1935 on a nation-wide scale to stimulate the new and developing field of technical wildlife management. Major objectives of the new Cooperative Units were to train personnel for responsible positions in wildlife work; to conduct research to provide the detailed information and techniques necessary to manage wildlife resources; to promote education by demonstration, discussions and publications; and to provide technical assistance to the state agency charged with the responsibility of wildlife management.

A valuable service has been rendered by the cooperative unit program over the past 18 years through the training of personnel for wildlife research and management. Fortu-



Dr. Ward M. Sharp

Leader of the Unit since 1948, Dr. Sharp is well qualified for administration of the Unit's work. His duties prior to coming here dealt with waterfowl, furbearers, upland game and big game management in Nebraska and Montana.

nately, the program had been approved by Congress prior to the creation of the Pittman-Robertson Federal Aid in Wildlife Restoration Act of 1937. This enabled the PR-Program to get under way with a nucleus of trained men. Since its creation, the Federal Aid Program in a majority of the forty-eight states has drawn heavily on personnel from the unit program.

At the present time there are 17 Cooperative Wildlife Research Units located at State Universities and Colleges in the United States and Alaska. In all of the states the agencies which are affiliated with the Unit program are the land-grant colleges, state game or conservation departments, the Federal Government and a private organization—the Wildlife Management Institute. These groups are truly cooperative because of the nature of the organization, administration, financial support and operation of research projects.

The Pennsylvania State University was selected as the location of one of the Research Units in March 1938. The program is now in its 17th year in the state, and during that period it has been sponsored and financed by The Pennsylvania State University; the Pennsylvania Game Commission; the U. S. Department of the Interior, Fish and Wildlife Service; and the Wildlife Management Institute. At the time of its initiation at Penn State the Unit Leader was Dr. Logan J. Bennett, now Executive Director of the Pennsylvania Game Commission. He was succeeded in 1948 by Dr. Ward M. Sharp who is the present Unit Leader. Dr. P. F. English, Professor, Wildlife Management, Department of Zoology and Entomology, has been Assistant Unit Leader since 1938 and was acting leader for a period during World War II. Dr. W. C. Bramble, Head Department of Forest Management, has rendered a valuable service in training men on problems of forest ecology and forest wildlife research. Mr. Robert G. Wingard, Wildlife Extension Specialist with the Extension Service of the University since 1952, works with County Agents throughout the state providing information and giving demonstrations on subjects pertaining to wildlife management. Mr. Randolph Thompson, now retired, served in this capacity from 1947 until 1952.

Because of the somewhat unique and specialized nature of the Wild-



Robert G. Wingard

A 1949 graduate of The Pennsylvania State University, School of Forestry, Bob Wingard is presently Extension Wildlife Management Specialist. He received wildlife management training under the Research Unit program in 1950.

life Research Unit work it was quite logical to locate the Unit at The Pennsylvania State University where all the research projects could become a part of the Agricultural Experiment Station. Headquarters for the Unit are provided in the Forestry Building on the main campus. Contributions of the University lie in the vast facilities, laboratories, equipment and highly trained personnel available for the various projects undertaken. Work on specialized projects is frequently delegated to certain University departments. For example, a forest-wildlife problem on seasonal deer browsing was conducted by the Forestry School, while game bird diet and ration studies were conducted by the Department of Poultry Husbandry. Likewise studies in animal nutrition, farm crop damage by wildlife, hunter sociology and other related aspects of wildlife management have been studied by specialists in their particular fields.

A curriculum of course work and field training in wildlife management at Penn State was initiated at the same time the Unit was established. This work, offered on the graduate level only, leads to a Master's degree in the Department of Zoology and Entomology or in the School of Forestry. Even though the Commission employs its own research staff it has been found advantageous for them to cooperate in the Unit work. Certain problems requiring special equipment or facilities available at the University are most economically assigned to the Unit. This arrangement not only aids in the practical solution of problems, but it contributes to the training of graduate students assigned to the work under supervision of the Unit or other University cooperators.



Dr. P. F. English

Dr. English is Professor of Wildlife Management, Department of Zoology and Entomology. He also serves as Assistant Leader of the Unit and has been in charge of wildlife management teaching at Penn State since 1938.



Dr. W. C. Bramble

Dr. Bramble is Head, Department of Forest Management, School of Forestry, and has been cooperating in the wildlife training program since 1938. He has done major research on browsing habits of deer and wildlife cover improvement on power line right-of-ways.

The Unit Leader is a biologist employed by the U. S. Department of Interior, Fish and Wildlife Service. He is aided in project administration, education and extension by the Assistant Leader, the Wildlife Extension Specialist, Dr. W. C. Bramble of the School of Forestry, and Mr. Roger M Latham, Chief, Research Division, Pennsylvania Game Commission. In addition to assigning the Unit Leader, the Federal Government supplies automotive transportation, some office materials, technical information and the complete facilities of the Patuxent Research Refuge.

Contributions of the Wildlife Management Institute consist of financial support provided entirely from private funds. This institution is recognized as the outstanding national organization devoted to promoting sound wildlife management. Aside from financial assistance to the Unit, it frequently grants fellowships for graduate study in wildlife management.

Candidates for Master of Science degrees are enrolled either in the School of Forestry or the Department of Zoology and Entomology. The University, at present, has no undergraduate course in wildlife management. In addition to formal course work the wildlife student is assigned a practical field problem in partial fulfillment of requirements for his advanced degrees. It is this phase of training that teaches the methods of making and interpreting observations, and the importance of collecting of scientific data in the field. This latter requirement has proved to be a most valuable part of the students work. Graduate students under the Unit program must prepare written reports of progress. The preparation of such reports helps to teach the analysis of facts collected in the field and requires an orderly expression of written ideas. Projects must be organized in an efficient manner and the work completed according to schedules and seasonal demands. Persons interviewing students as prospective employees appear to devote much of their time discussing the field research pursued by the candidate.

The schools and departments of the University play an important role in the success of the Unit. Students majoring in wildlife management must comply with the rules and regulations of the institution. The Graduate School maintains policies which must be met in fulfilling the requirements for an advanced degree. Students cannot enroll with the Wildlife Research Unit, but must matriculate with either the School of Forestry or the Department of Zoology and Entomology. Students are then responsible to the administration and policies of their major departments. The Unit Leader assumes full responsibility only for those students who are assigned to him by one of the above departments of the University. Otherwise, he serves only in an advisory capacity to the department in which the student is a major. The Unit does not function as an independent department but cooperates with several departments whenever students are involved.

Publications and releases of research findings are based on data obtained from the approved field projects conducted by graduate students, the staff or both. Current reports of work in progress are published every three months in the Quarterly Report of the Pennsylvania Cooperative Wildlife Research Unit. When a thesis is prepared on a field project this document becomes the property of the major department of the University in charge of the work. Abstracts or manuscripts may be prepared from these theses for publications in journals and other periodicals. The promptness of publication of these depends upon the department in charge of the student in issuing policies on authorship and provisions for writing of the manuscript.

In addition to the formal training of students who are preparing for a career in the wildlife management field, the Unit supports informal education by demonstrations, discussions and aid in other extension work. During the early years of wildlife work at the University there was a natural reluctance on the part of the public to accept scientific findings. Even today the trained wildlife biologists and game technicians are looked upon with disfavor by some groups. However, the validity of the technical ap-

proach to wildlife problems is established when the results of research are applied to field management. Those working in the profession will readily admit to a lack of knowledge in certain areas, but the contributions of scientific studies to deer herd management, waterfowl flyway management and upland game restorations have been invaluable to our understanding of these game populations. In recent years more and more requests for wildlife management information has been and is being received by the Unit. There has been a gradual acceptance of the fact that wildlife must be managed in accordance with sound land use based on scientific information.

After the Unit had been in operation for 10 years there was considerable demand placed upon the Leader and Assistant Leader to provide information at meetings and for correspondence in answer to requests on matters related to wildlife work. In 1947 a full-time wildlife management extension specialist was added to the Agricultural Extension Service staff to conduct these extension activities. In so far as practical, the wildlife extension work is carried on through the County Agricultural Agents as part of their local extension program. Just as it was pointed out earlier, the research facilities of the Experiment Station are available to the Unit, so it appears logical that extension work likewise could be effectively integrated as part of the estate-wide Agricultural Extension program. The County Agents' extension programs have the respect and support of people in every county on matters dealing with all aspects of agriculture. Is it not reasonable then that extension facilities be utilized to present wildlife information which is basic to the problem of land management?

During the past two years, the Extension Specialist has been closely associated with the Unit program so that new information could be made available at meetings and discussion groups. Efforts have been made to convert the results of scientific studies into timely and interesting presentations of particular problems.

The Unit has cooperated each summere in the educational programs of the two conversation workshops conducted by the University. One day is normally spent with each group of boys participating in the Junior Conservation Camp financed by the Pennsylvania Federation of Sportsmens Clubs. A two day session is devoted to discussions and field trips with each of the two groups attending the Teachers Conservation Laboratory.

Proper management of all natural resources depends to a large extent upon public support of the program. In the case of our wildlife resource an understanding and an appreciation of the problems is essential. Since the sportsmen of Pennsylvania assume part of the responsibility of the wildlife management program in the state, it is their obligation to be fully informed of the issues in order to carry out these responsibilities in the best possible manner. With this thought in mind the Pennsylvania Cooperative Wildlife Research Unit is vitally concerned with research, training and public education. Through a program of continuing *research* for better management practices, adequate *training* of technical field workers and *education* of the public, the Unit pledges itself to assure the future of our wildlife resource.

Part II describing the accomplishments of the Cooperative Wildlife Research Unit will appear in the October issue.



Memories of a Pennsylvania Market Hunter

By Albert M. Armstrong as told to Paul A. Matthews

Illustrated by HENRY VESTER

RARE indeed is the occasion when a rifle crank of these days runs across a real old-timer who will sit by the hour and answer all the questions that some young whipper-snapper can fire in his direction, but such an oldster is Albert M. Armstrong of Athens, Pennsylvania. His eighty odd years of close observation on both the field and the range have given him a knowledge of ballistics, calibers, loads, and hunting methods that few of us will ever acquire. While it may be true that our game is under more of a strain today than in the latter 1880's, and some of the habitats changed with the mighty lumbering projects that ate our virgin forest, it was true then as always, that it took a properly placed bullet or load of shot to produce the bacon. Bert has been a keen observer and student of firearms since before the day he hunted for the market.

The day I called on Bert was blessed with a good dose of liquid sunshine; just a steady drizzle that chilled the outside atmosphere and somehow made our conversation more pleasant before the stove within the cabin.

Bert leaned back in the antiquated rocker, half closed his eyes and slipped back in the years to that October morning in 1887 when the little community of Litchfield, Pa. lay white and crisp with frost. Even as he talked, I could picture two belching clouds of acrid powder smoke rising in the frosty air as he executed a neat double on a pair of grouse, the first of the season. Now Bert lays no claims to being a fancy shot himself, but he tells of Charlie Burgess having five grouse on the ground before he picked up the first one, and I'd rather suspect that Bert was equally capable of such shooting. At any rate, there were plenty of grouse in those days to give a hunter the opportunity to make such kills. Bert claims their population has decreased, not by over hunting, but because our forests were stripped of the oaks, beeches, and hickories. Such groves at that time were interlaced with wild grape vines that produced food by the bushels for grouse and squirrels. Bert has known hunters to kill seventeen birds in a day's time and has himself seen as high as fifty or sixty birds in one covey feeding on the grapes. Another item that hurt our grouse is the fact that of recent years farmers have ceased to make buckwheat their main crop.

"Then," said Bert, "we threshed more buckwheat than all the other grains put together. The grouse thrived along the edge of the big fields and it made easy hunting."

We often bemoan the loss of the 'old days' and the hunting they had then, but we seldom think of the strides made to fill the gaps. It is hard for a young man of my age to imagine what Pennsylvania would be without deer hunting or the ringneck pheasant, yet Bert didn't even see a deer track in the state until in 1904 when he found one beside a spring near Litchfield station. It is no wonder the old-timers depended on big-bore, heavy-bullet rifles. They couldn't afford to chance a crippling shot the way we see practiced every

deer season. The big, heavy slugs almost always insured a good blood trail that could be followed even on dry ground.

This seems to be one black mark against our present day hunter. Entirely too many of us enter the brush with light calibered and often unsighted rifles, and likewise leave a portion of our crop laying in the thickets with feverish wounds that eventually prove fatal. Bert is strictly against such shooting so I asked him for his opinion on a suitable rifle for all Pennsylvania hunting. He didn't name the caliber that I hoped to hear, but he did say that such a rifle ought to be bigger than a thirty caliber on a light, fast action of which we have several different makes and models on the market today.

In these days we look up to the man that has the money and the means to spend the majority of the fall days in the field, but then, said Bert, a man who spent his time hunting was just another 'damned meat hunter' too lazy to work for a living. A man got a dollar a day for planting potatoes (hard labor), or at the first part of the season he sold his birds from a dollar and a half to two dollars apiece. As the season progressed, the price tapered off, until along in January a grouse brought about forty cents. Rabbits and squirrels never were worth much, sometimes running as low as ten cents apiece. But added up any way you want to add, the meat hunter got his wages and enjoyed getting them. It was a short day when you couldn't dump seven grouse on the meat dealer's bench for your day's work. Then maybe you stopped at the gunsmith or the local hardware and bought a few pounds of ffg powder and five pounds of shot for reloading purposes.

Reloading shotshells, claimed Bert, was a good share of the success of the hunter. Bert used the big brass cases of that day with their Berdan primer, and when they became short in supply, he said that he used the big Fourth of July caps with the excess paper trimmed off. These were placed in the primer pocket on top of the anvil, and then the empty cup was pressed in place. Loaded in this method, the same primer cup could be used three or four times until the firing pin pierced it.

I questioned Bert about the size of shot one ought to use, and in his opinion, the best size was the one that patterned the best in your shotgun. Like rifles, some shotguns can be fussy about their diet. Quite often a gun would pattern good with numbers 2, 7, and 8 shot, but nothing in between; thus a man had to tinker a lot before he obtained his one load. Bert's first market hunting shotgun was a Belgain made twelve gauge imported by H&D Folsom Arms Co. of New York City. This gun swallowed three drams of powder to one ounce of number 6 shot to give its best pattern at forty yards. When he switched to a Baker in 1893, he also had to switch to number 8 shot to get his pattern.

"Of course the powder varied a lot in those days," said Bert. "Lots of powders would cake up so bad at the muzzle, that when a man came to a spring or a creek, he'd hold the ends of his barrels in the water until the soot soaked out of the inside. I always used either DuPont or Hazards ffg powder until Kings Quickshot Powder Co. of Buffalo, N. Y. came out with theirs. That was the best that I ever used. It burnt clean and left very little fouling."

While Bert was still on the subject of reloading, I asked if there was any difference in the killing power of soft or chilled shot. That, he claimed, depended on what you were hunting. Soft shot for light birds, and chilled shot for heavy birds such as ducks and geese where deep penetration was needed. There was the same difference in choice of shot as there is



choice of bullets for a rifle.

"What really counts," said Bert as he leaned toward me in his chair, "is to get a gun that shoots where you look, then, by darn, you'll kill your meat. All this stuff about going into a crouch the way they do at trap and skeet shoots isn't necessary. When a bird went up in front of old Charlie Burgess, he just kept his eyes on it and pulled up and shot. No mussin' or false swingin' for him."

Bert waited for his blood pressure to settle after that explosive remark and then started talking about the gauges and weights of the guns used. From the time of the Civil War it was the accepted opinion that nothing less than a ten gauge gun would kill efficiently. (This again speaks of the old timers' desire to kill and not merely wound). These guns usually weighed in the vicinity of ten pounds and he bragged loud about the 'reaching out' effects of their thirty to thirty-four inch barrels. They always did remain the prime favorite around the lake regions, but about 1885 the upland hunter took to the lighter and shorter barreled twelve gauge. Bert's favorite, the Baker, weighed just eight pounds and carried thirty inch barrels. The twelve gauge remained standard for the market hunter until in 1896 when such hunting was made illegal.

Although the twelve gauge is still the mainstay of most hunters, few of us, unless we are really cranks, take the time or have the patience to find the proper commercial load for our shotgun. Bert emphasized the fact several times during our conversation, that in order for a man to become an efficient killer instead of a wounder, whether it was big or small game, rifle or shotgun, the next most important item to proper shot placement, is the proper choice of bullet or shot pattern. The real conservationist and sportsman would rather lose a quarter of venison by having it ground to hamburg by the use of an over powerful rifle, than to let a fine animal die of a small caliber wound miles from the spot where it was first hit. The small calibers are excellent for precision, vital spot shooting, but like Bert says, most of our shooting is in the brush and we are dependent on the penetration qualities of a heavy slug.

As I drove home from Bert's cabin, I marveled at the efficiency of the old market hunters of that day and how short a time it takes to drive our game to extinction unless we have well regulated seasons and bag limits. How many days would it take us to deplete our grouse supply if we were to kill from ten to twenty grouse per day for a three month period? Where only a few hunted in Bert's day, now we have an army of hunters. Whether or not Bert realizes it, he pointed out many important lessons in conservation that day, lessons to which we should give considerable attention.

Eight North American animals hibernate during the cold winter months. These are the jumping mouse, badger, bat, gopher, woodchuck, chipmunk, raccoon and bear.

* * *

What is probably the oldest wild duck on record is one shot on the Sartain Ranch in California December 27, 1952. It was banded at Lake Merritt, California, December 8, 1932, making it at least 20½ years old when shot.

The San Juan Rabbit

By Roger M. Latham

Chief, Wildlife Research Division



PGC Photos by Stan Forbes

FOR about two years, sportsmen's clubs and beagle clubs have been purchasing a rabbit known as the San Juan "gone-wild" rabbit for stocking in Pennsylvania. Some have released these animals directly into the wild, while others have held the adult rabbits for breeders and stocked only the young born in hutches. And so far, there is much disagreement as to whether they do or do not give a good chase before the hounds.

There has been considerable speculation among Pennsylvania hunters about the origin and history of these rabbits in the United States. Mr. Leo Couch, a former employee of the U. S. Fish and Wildlife Service, was one of the first to report the existence of this animal on the San Juan Islands in Puget Sound off the coast of Washington. He describes a visit to Smith Island, one of the San Juan group, in 1924. This 56 acre island was then used by the Department of Commerce as a lighthouse station and by the Navy Department as a radio compass station. The Department of Agriculture administered it as a national bird reservation.

He states: "The commandant of the Bremerton Navy Yard provided us transportation to the island on a mine sweeper U.S.S. Swallow. Upon landing, we saw evidence of rabbit depredations everywhere, and animals of various colors—tan, black, white, reddish brown, some spotted, but the majority straight colors—running in all directions. The lighthouse skipper told an interesting story of how the rabbits were brought to the island. About the year 1900, a lighthouse keeper bought a few so-called Belgian hares, with the idea of supplementing his meager income through meat sales to the Seattle markets. Subsequently, at four-year intervals, Black Flemish and New Zealand breeds were introduced to

prevent inbreeding. No one on the island knew just how lucrative this venture proved; but a later keeper, not being interested in commercial pursuits, left the rabbits to shift for themselves. The food supply kept up with the pyramidal increase until the spring of 1924, when the Navy Department requested assistance from the U. S. Biological Survey (today known as U. S. Fish and Wildlife Service) in meeting the problem. At that time the rabbits were undermining the buildings.

"At the first visit in May, 1924, practically all the succulent forage was eaten close to the ground. Three types of vegetation were plentiful, namely, bracken *(Pteridium aquilium pubescens),* tarweed *(Media exigna),* and cheat *(Bromus sp.);* but the rabbits refused them as food. Douglas firs, dwarfed by the continued winds, were barked where the branches hung low. Industrious burrowing had wreaked vengeance on the island. The ground was upheaved, with openings every few feet. Erosion occurred more rapidly, causing the bluffs to cave into the sea and gradually decreasing the size of the island each year. The destruction of forage and shrubbery no doubt accounted for the lack of nesting birds. It must be borne in mind that Smith Island is a national bird reservation, where birds formerly rested and congregated in great numbers.

"Utilizing the rabbits for food was out of the question, as many of those examined were found to be diseased. Their excessive abundance and malnutrition had left the majority in poor condition.

"Preliminary investigations having been completed, plans were made to reduce the pest. The month of August was selected for the work, since it was the driest season of the year, and a crew was organized to carry out control measures. Sliced apples dusted with strychnine alkaloid were ex-



Two of the best distinguishing features of the San Juan rabbit in the field are the long ears and legs.

posed in late afternoon, scattered along the rabbit trails, and the next morning the dead animals were gathered. Rabbit warrens were fumigated during the remainder of the day with calcium cyanide, dusters being employed to force the material into the burrows, where its reaction with moisture liberated cyanogen, a suffocating gas. As a result of the poisoning operations, 621 rabbits were picked up, and it was estimated that twice that number were killed with cyanide in the burrows. After eight days there were few rabbits left, and these appeared extremely wild."

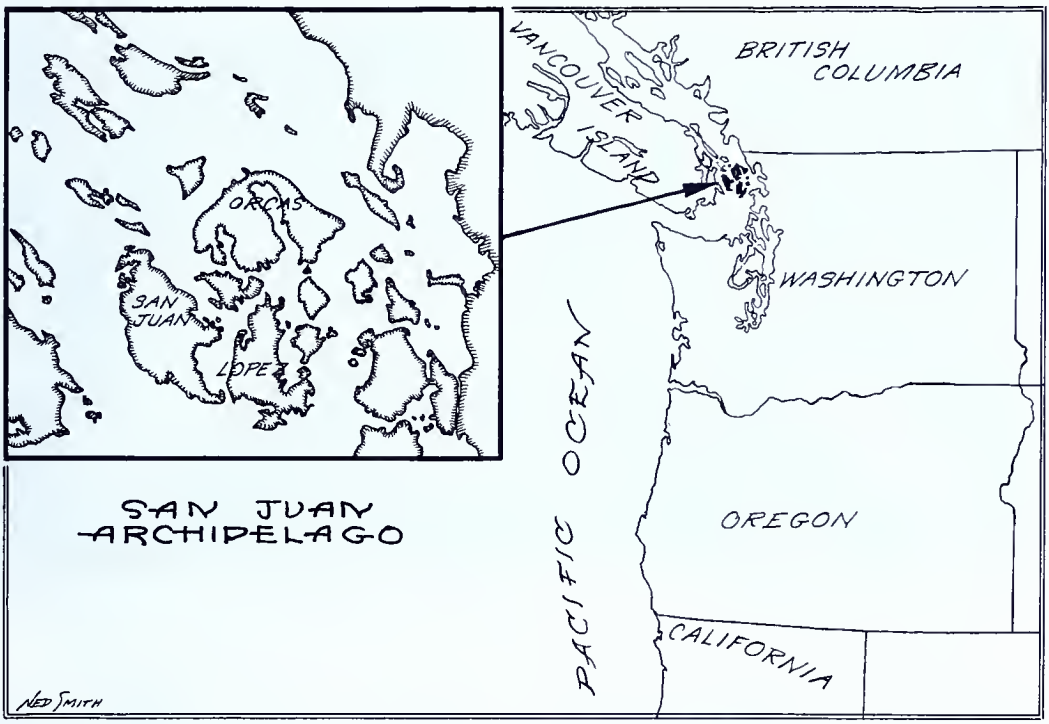
In regard to the distribution of these rabbits in the San Juan group, he says: "Long Island was stocked with rabbits from Smith Island, according to residents of Richardson, on Lopez Island. Other islands in the near vicinity, namely, Colville Island and parts of Whidby Island, can no doubt trace their original stock to Smith Island. Islands north and west of Friday Harbor, however, may have been infested from another source. According to Capt. John Pierce, of Olympia, J. A. McCormick and J. M. Edson, of Bellingham, the San Juan, Wasp, Jones, Spieden, Flattop, Johns, Skipjack and Mateo islands are at present the home of imported rabbits. Quoting Mr. Edson: 'It is my impression that rabbits have been common on the islands since I came to this region. I visited Skipjack Island as early as June, 1895, and while I have no written record as to the rabbits, it is my recollection that a number of them of different colors were seen on that trip. I suspect that if their history can be traced it will run back to the days when the Hudson's Bay Company occupied this region.'"

From this we can conclude that the origin of the San Juan stock was the European rabbit *(Oryctolagus)* from which almost all domestic breeds have come. The rabbit being imported into Pennsylvania resembles the original wild genus of Europe, and is not much different from our cottontail in color. The San Juan is a little darker, will weigh from four to seven pounds, has somewhat longer ears and larger feet than the cottontail.

The wild European rabbit digs its own burrows and there is evidence to show that the released San Juans are doing the same thing here. They may live in a single burrow or in an extensive warren comprised of many dozens of holes. These burrows may be from two to eight feet deep depending upon the soil and the nearness of the ground water to the surface. Like the cottontail, several litters are produced each year and these will average about 5 to 6 young per litter. The period of gestation is about 28 days. The young are born blind and without hair, begin to leave the nest to feed at about 12 to 14 days, and can take care of themselves at the end of 3 weeks.

The fact that the San Juan is a true rabbit and not a hare (hares are born with eyes open and fully furred) establishes its status under the Game Law. Therefore, *the same seasons and bag limits and general hunting regulations will apply to the San Juan rabbit as are fixed for the native cottontail. The San Juan rabbit will not be legal game during the snowshoe hare season.*

Because the Washington State Department of Health has had no reports of bubonic plague and other serious diseases transmissible from rabbits to man from the San Juan Islands in recent years, the Pennsylvania Health Department has excepted the San Juan rabbit in its recent regulation against the importation of wild hares, rabbits, and rodents from certain states and countries. (All such shipments must be accompanied by a permit issued by the Division of Veterinary Public Health of the Department of Health, Harris-

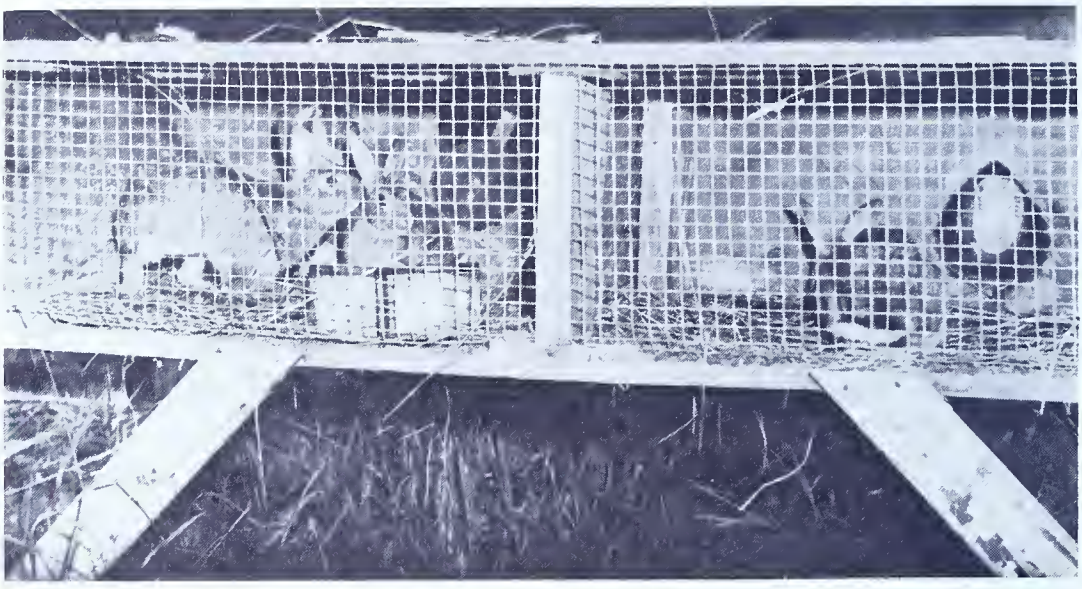


burg. The application for permit can be obtained from all District and County Medical Offices or the Division of Veterinary Public Health, Department of Health, Harrisburg, and must be accompanied by a check or money order for one dollar ($1.00) made payable to the Pennsylvania Department of Health.) This regulation will again be enforced if at any time it is demonstrated that the San Juan rabbits are a menace to public health. Rabbit, hare, and rodent shipments are still banned from most western states because of recent evidence of plague and other transmissible diseases.

Pennsylvania releases of this rabbit are no more than two years old, and information concerning its adaptability to this environment is meager. It is known that some of the animals survived at least one winter, even in the most northern counties. However, the 1953-54 winter was unusually mild. Examination of release sites have shown that it will eat a variety of native plants and agricultural crops, and appears to browse plants not regularly eaten by native cottontails. It eats considerably larger quantities of vegetation than the cottontail and, therefore, is individually capable of far more destruction.

Little is known about the possible relationship this rabbit may have with other wildlife. It is not anticipated that it will cross-breed with the cottontail, but it may adversely affect the numbers of cottontails through competition for food or living space.

The Game Commission is always willing and anxious to provide the greatest amount of recreation possible for the hunters of Pennsylvania, and in the past has imported and stocked a variety of game birds which appeared to possess desirable sporting qualities. However, wildlife management for recreation must always be tempered by the realization that certain game animals can be destructive to farm crops and livestock. The Commission, or individuals, would be liable for severe criticism if they in-



Young San Juan rabbits are often held in hutches, much like those used in raising domestic rabbits or hares.

troduced a game animal for recreational purposes which might eventually cause a great amount of crop damage.

No one can predict the ultimate consequences of an introduction of this kind. Perhaps the San Juan rabbit could become a desirable game animal, or perhaps it could become a serious pest. It should be remembered that this *same* rabbit overran Australia and caused tremendous destruction on that continent. Dr. Durward Allen in his new book *Our Wildlife Legacy* tells the story of this introduction: "European rabbits were introduced into Australia in 1859. Within a few years it became evident that the introduction was an outstanding biological blunder. There was alarm, then consternation, as the animals spread from Victoria into the grazing lands of New South Wales. In 10 years they had conquered Queensland and occupied thousands of square miles. They leaped ahead like a prairie fire. Everywhere they scourged the vegetation. Five rabbits eat as much as one sheep. This type of rabbit is a digging animal and this habit has caused serious erosion problems in Australia and Europe.

"In Australia the people have hunted, poisoned, fenced, trapped, dug out, ferreted, dogged, bountied and killed these rabbits in every possible way. It has cost millions of dollars of public and private money to try to halt their increase and spread. Great barriers of wire netting totaling 7,000 miles were strung across Queensland, but these weren't rabbit-tight and the animals swarmed ahead. Rabbits now occupy more than a third of the continent—wherever anything green survives."

The reader-sportsman may say "Yes, but that could never happen in Pennsylvania, not with all of our hunters." It is agreed that it probably would never increase to the extent that it has in Australia, but it could become far more destructive than the cottontail is at the present time. Over 2,000 years ago the Romans stocked the Balearic Islands with these rabbits from Spain. There they became a terrible nuisance, and even undermined the peoples' homes and literally ate all of the vegetation. In England, this rabbit has been recognized for generations as one of the worst pests of the farmer. It should be re-

membered that besides their voracious appetites, they dig more holes than groundhogs do. At the present time, the Federal Government prohibits the importation of both the European rabbit and European hare from foreign countries under the Lacey Act along with the mongoose, flying foxes, the starling, and the English sparrow.

Research personnel are watching several of these San Juan releases closely. Within the next few years, they hope to decide whether this new game animal should be encouraged or rigidly controlled. Let us hope that *this* introduction will not turn out to be a biological blunder.

DOVE, RAIL AND GALLINULE SEASON FOR '54

The U. S. Fish and Wildlife Service has announced the 1954 hunting regulations which will apply for the shooting of mourning doves, rails and gallinules.

The season for rails and gallinules in Pennsylvania this year will run from September 1 to November 9, inclusive, a 10-day extension over the 1953 season. These marsh birds may be taken one-half hour before sunrise to sunset daily except Sunday. On October 30, the first day of the small game season, no wild bird or animal may be lawfully hunted before 9 a.m. Eastern Standard Time.

The daily bag on rails and gallinules is 15, except sora, the same as in '53. The possession limit, after the first day, is 30, double that of the previous season. Sora remains at 25 for both the daily and possession limit.

The dove shooting season in this state will run a full month as last year, on week days September 15 to October 14, inclusive. Shooting hours are one-half before sunrise to sunset. In '53 the hours were noon to sunset. The daily bag and possession limit for doves is 8, the same as last year.

A federal stamp for migratory bird hunting is not required to hunt rails, gallinules, sora or doves.

Federal regulations prohibit the use of any shotgun capable of holding more than 3 shells, including semi-automatic and hand operated repeating shotguns. The shotgun plug must be incapable of removal without disassembling the gun. Shotguns used in taking doves, rails, gallinules and sora may not be larger than 10 gauge. Rifles may not be used in taking migratory game birds. Such birds may be taken through the use of bow and arrow.

Federal regulations also state: Migratory game birds may not be taken by the aid of salt, or shelled or shucked or unshucked corn, wheat, or other grains, or other feed or means of feeding similarly used to lure, attract, or entice such birds to, on, or over the area where hunters are attempting to take them.

Migratory waterfowl regulations will be announced later by the Federal Government.



Modern Johnny-Appleseeds

By Johnny Mock

Outdoors Editor, Pittsburgh Press

GOOD Samaritanism, combined with an outing. The result—mutual benefit of all concerned.

In a few words that covers the story of a tree planting program staged last May by the Conservation Committee of the Dormont-Mt. Lebanon Sportsmen's Association and the Kiwanis Club of the South Hills, Pittsburgh. Co-sponsoring the undertaking was the Pennsylvania Game Commission and the Austin-Costello Sportsmen's Club.

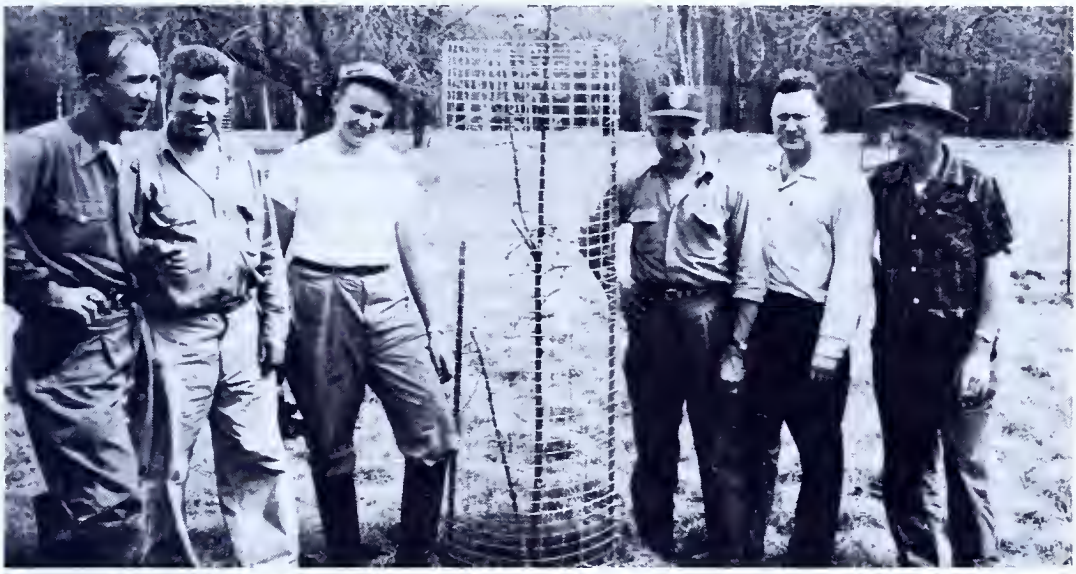
It was in the wee hours of the morning when a caravan of 12 cars and three trucks left Pittsburgh, heading into the big game country, to meet others interested at the old B. & O. bridge, Route 872, one mile south of Wharton, Potter County.

Awaiting the local party were district game protectors Norm Erickson of Emporium, Bill Neeley of Austin, M. M. Crooks of Lock Haven, and members of the Weiss Camp, Moore Run; Koolsprings Camp, Trout Run; Buerkle Camp, Berg Run; Mason Hill Camp, Driftwood; and Hutson's Camp, Bailey Run, along with representatives of the Austin-Costello Sportsmen's Club. Accompanying the local party from Pittsburgh were Allegheny County Game Protector Fred Servey and his four deputies.

The Game Commission furnished 100 blight-resistant chestnut trees. The Dormont-Mt. Lebanon Sportsmen and Kiwanis Club furnished one ton of wire fabric, 2 x 4 inch mesh, 9 gauge 6 feet high, 200 pieces of ½ inch steel pipe 6 feet long, 50 six-year-old apple trees, and 100 pounds of sunflower seed, plus food and refreshments for the entire party.

The first objective was an abandoned field near the head of Lusbaugh Run, off the Trout Run Road. There the group undertook the major part of the project, planting 86 of the chestnut and apple trees, each surrounded by a wire guard to protect them from browsing deer. Strength was added by reinforcing the enclosure with upright pipes, droven into the ground.

The undertaking was well planned. While the locations for the plantings were marked off by one party, another followed and opened the ground to receive the trees. Then



Members of the work party survey the young trees and their protective wire guards.

came the planters and finally those who erected the wire guards. Other similar plantings, some without the protection, were made in the Moore Run section above Costello and the Mason Hill country, above Driftwood. The plantings were finished early in the afternoon after which the group made its way back to the Buerkle Camp where food and refreshments were served the tired workers.

The committee in charge—A. J. Buerkle, Chairman; and Ed Straub, Bob Errick, H. Ruehreshneck, and Lou Beinhauer, III, are to be commended for a job well done. What was done by these altruistic sportsmen could readily be done over much of the country in which others find sport, recreation and relaxation. Through such efforts, game food for the future would be all the more insured.

Fire Prevention—Everybody's Gain

Pennsylvania's fall fire season will soon be here. This timely reminder is for persons who take to the open: *Uncontrolled forest and field fires destroy much wildlife, and they sometimes pollute waterways and poison fish.*

Burned areas mean blackened wastelands and the loss of food and cover necessary to the existence of wild birds and animals. Forest fires not only ravage valuable timber, they wipe out the beauty and the recreation that go with bountiful woodlands.

Such fires are enemies of soil conservation, too. They burn out humus and decaying vegetable matter, thereby damaging the productivity of the soil.

So, being careful with fire in any form is everybody's responsibility and everybody's gain. The more vigilant people are in the outdoors the smaller will be the loss of valuable resources. And natural resources are extremely important to all of us, directly and indirectly.



Taxi Ride Fails to Tame Fox

BLAIR COUNTY—On June 26, 1954, while driving a taxi near Tyrone, Mr. Everhart hit a red fox. Assuming it dead, he put it in the trunk of his vehicle and continued on his way. Having several other people to take here and there, Mr. Everhart was unable to look at his prize until he had completed his shift at 11:30 p. m. When showing his relief driver, Mr. Bistline, his unusual catch, he found that Mr. Fox was very much alive and ready to protect himself with all the vigor of a cornered badger. Not having any means at hand to subdue the animal in that situation, the two men decided to ask Deputy Game Protector Minerich, who lived nearby, for a little help. With a few years' experience dealing in unusual wildlife happenings, Deputy Minerich was able to kill the animal and help some wildlife that might have been eaten. —District Game Protector Dean M. Crooks, Bellwood.



In Trouble With In-Law

CLARION COUNTY—"Bunny Beers, who has a local service station near Clarion has been bothered with raccoon in his fish pond and garbage pail. He set some traps and being known as a beaver trapper, he didn't think he would have any trouble getting the raccoon. But instead of getting the raccoon he caught his mother-in-law.—District Game Protector William D. Denton, Clarion.

Merit Award

FAYETTE COUNTY—We have started a predator control campaign in Fayette County which I believe will have some good results. The County Sportsmen's Organization has offered an emblem to be worn on a jacket for any resident who will kill five predators or twenty snakes. The emblem is marked merit award. The names of those receiving the award are listed in the local paper each month.—District Game Protector J. F. Blair, Mill Run.

Shocking Experience

GREENE COUNTY—This story was related to me by Cooperator Harry Kowalski of Carmichaels. After completing an electric fence around a new pasture field, I was amazed to see that I had a visitor tagging me—a deer. After the first touch of the wire, it took this deer three hours to get out of the enclosure.—District Game Protector A. J. Ziros, Carmichaels.

A Real Sportsman

ELK COUNTY—I would like to highly commend Mr. David Sage, owner and proprietor of a general store at Portland Mills, for his out-

standing interest in promoting better hunting within Elk County, where he resides. During the month of June, Mr. Sage took it upon himself to cultivate and plant approximately one acre of buckwheat on Sylvania Electric Company lands, to be left standing for game food. The outstanding part of the subject is that Mr. Sage is 74 years of age and is suffering the loss of the right lower limb of his body and gets about by the use of crutches.—District Game Protector Gerald D. Kirkpatrick, Portland Mills.

City 'Chucks On Wanted List

CUMBERLAND COUNTY – Another example of the domesticity of our wildlife was demonstrated to me recently. On June 12, 1954, I received a complaint of woodchuck damage at 132 West High Street, Carlisle. This address is located just about 100 yards from the square of the town which has a population of 17,000. B'rer chuck was really going to town on several flower beds in the vicinity and was No. 1 on the "wanted" list of the women residing in the locality. —District Game Protector Homer H. Thrush, Boiling Springs.





Pennsylvania Boasts Only Bird With Band-Aid

LUZERNE COUNTY—On May 27th I had an unusual complaint. Mr. Ponomo called and said he wanted to see me right away concerning turkey damage. Upon investigation, I found a turkey had flown through a window in his summer home adjoining State Game Lands No. 187. If Mr. Ponomo still didn't have the turkey I wouldn't have believed it. Satin drapes, shower curtains, and bed spreads were torn to shreds. Blood was showered from walls to ceiling. After a considerable amount of work, we got things cleaned up to where it was fit to live in again. I might say the only thing our friend, the gobbler, suffered was a cut on the leg. You can see that turkey running around today with a plastic bandaid which we put on to stop the bleeding.—District Game Protector Norman J. Forche, Conyngham.

Call of the Wild

MERCER COUNTY—While releasing Game Farm raised ducklings this month, Harold Welsh and I experienced just how well an animal or duck call will work. The four to five week-old ducklings were putting up quite a bit of noise with their consistant calling while in the crates on the truck. On two occasions we had the opportunity to drive close to the point of release. After we arrived, and before the release was made, a wild hen mallard flew right up to us and lit on the water. After the release the adoption was made immediately by both hens. One hen led her brood into cover, while the other stayed around and followed the truck along the pond as though waiting for the rest of her family. When we left the area, she flew back to join her new "farm-made" family.—District Game Protector Ralph E. Flaugh, Greenville.

Masked Bandit Wrecks Ringnecks

MERCER COUNTY—To some people who do not think that raccoons are a detriment to our small game: On the night of July 1, 1954, a large female raccoon and two of her young chewed a hole in the wire of a covered pheasant holding pen and killed 110 four- week-old pheasants. Worst of all, they ate only three of the 110. Bob Hazlett who is raising the birds for the Game Commission would have received $110.00 for the birds, but now he is in the red that much. What Mr. Hazlett has called these raccoons cannot be mentioned in these "remarks."—District Game Protector Arthur T. Biondi, Mercer.

Why Ducklings Disappear

CLEARFIELD COUNTY—Recently I have been trapping turtles in the Dubois reservoir. This area consists of 108 acres of water. Sometime ago I observed four wild ducks with ducklings on the reservoir. At this date I am unable to find or observe any of the ducklings. During the last six days we have netted 45 turtles, ranging from five pounds to forty pounds in weight. So it is not hard to figure out what has become of the young ducklings.—District Game Protector Claude B. Kelsey, Troutville.

No Greater Love

CRAWFORD COUNTY—A local woman told me an experience she had a few years ago while hunting ducks with her husband. They were going into a beaver dam to hunt. Her husband was carrying the decoys and she the guns. He was in the lead crossing a beaver dam when she slipped and went into the dam, started to sink into the mud holding the guns above her head. Her husband turned and when he saw what condition she was in, he got the most sorrowful look on his face. All was well until he shouted "SAVE THE GUNS." I believe this man to be a real sportsmen always thinking about his firearms.—District Game Protector John Putnam, Hydetown.



Northumberland County

Forty-Second In A Series

Note: This center sheet can be removed if desired, without damaging the magazine, by loosening the two center staples.

Land Area

Northumberland County contains 300,544 acres of which 121,706 are forested. Publicly owned land totals 9,430 acres, most of which is in State Game Lands.

Transportation

Railroad transportation is furnished by the Pennsylvania, the Reading, the Delaware, Lackawanna and Western, and the Lehigh Valley. The Susquehanna Trail (U. S. 15) and U. S. Route 122 traverse the county, which has 496 miles of improved State highways.

District Game Protector

District Game Protector Clyde E. Laubach, Box 172 (W. Center Street), Elysburg, has jurisdiction over the entire county.

Fish Warden

Fish Warden Charles Litwhiler, Numidie, has jurisdiction over the county.

Agriculture

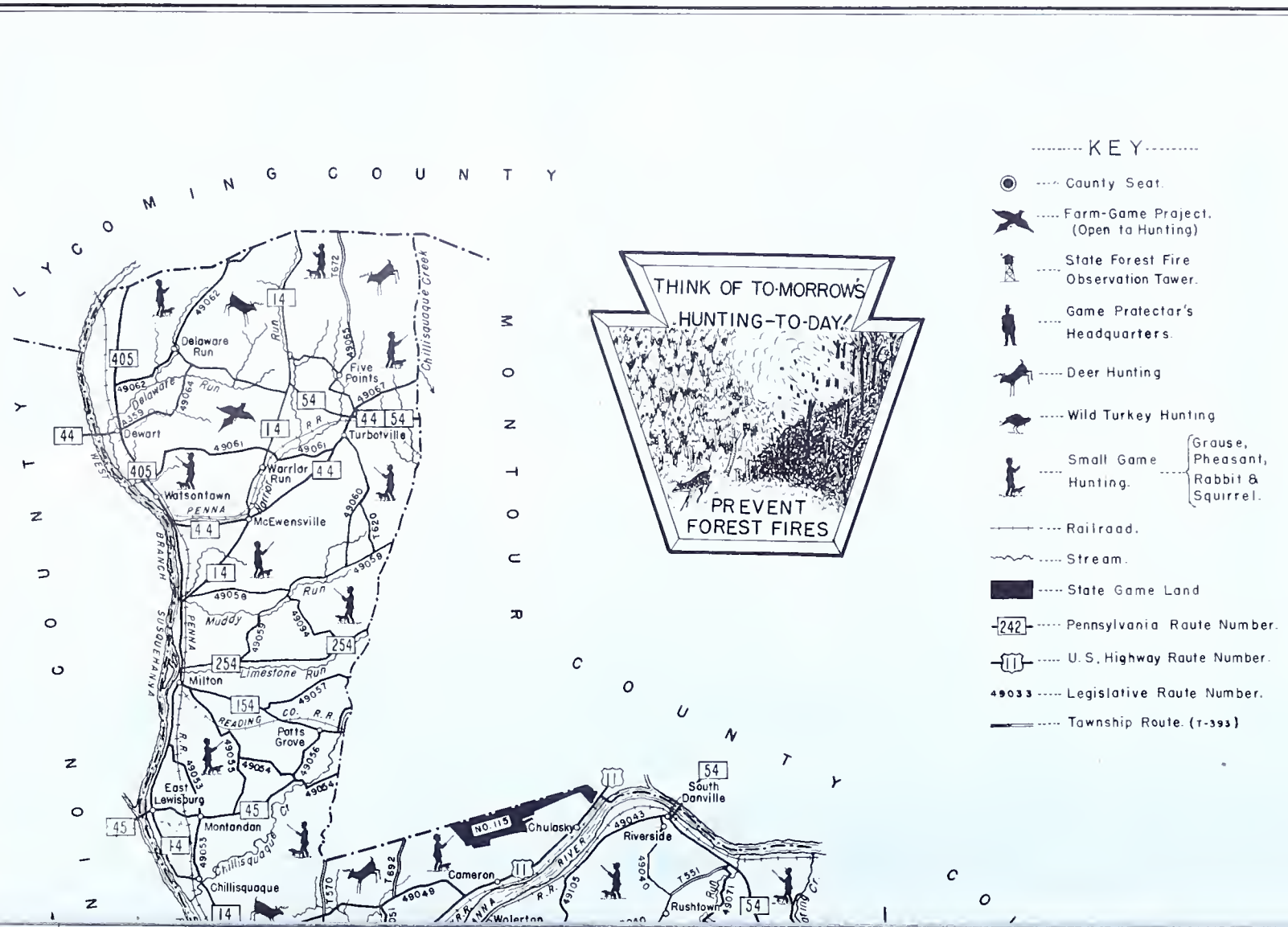
The bottom lands along the Susquehanna provide some of the richest farm land in Pennsylvania, though the total acreage is small—182,454 acres (ranked 36th in the State). In recent years there has been a considerable development of truck farming on these river lands. Principal agricultural products include cherries, apples, peaches, potatoes, poultry and eggs, oats and other grains.

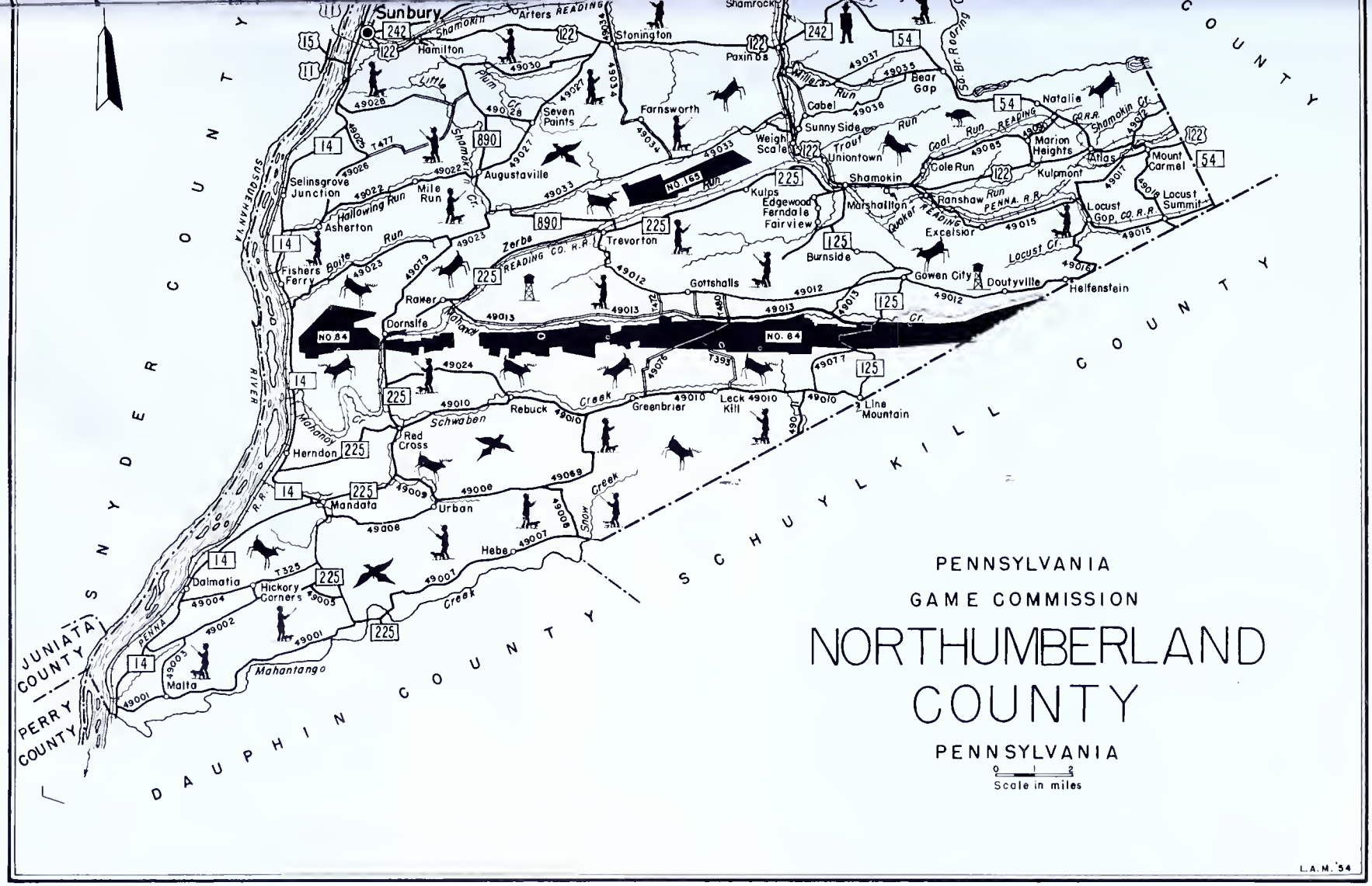
Industry

Northumberland County is an important industrial section in the center of the Appalachian vallemont region. Perhaps no other county of the State has more beautiful and picturesque scenery, both land and water, or greater diversification of agricultural, manufacturing and mining interests. The Middle Anthracite basin has its western end in Northumberland County and mining is the chief mineral industry. Face brick and roofing granules are made from shale, and there is commercial production of crushed limestone, molding sand and lime. The principal classes of manufacturing industry are textiles and textile products, mine and quarry products. The chief products are anthracite, silk and rayon goods, cars and parts, slaughtering and meat packing, beer, bread and other bakery products, canned and preserved goods, women's and children's clothing.

History

Northumberland was organized on the eve of the American Revolution, March 21, 1772. It was formed from parts of Lancaster, Cumberland, Berks, Northampton and Bedford counties. Historic influences in this county go back to the establishment of the Indian town of Shamokin, which authentic records prove to have antedated 1728. The Iroquois Chief Shikellemy, sent here by the Six Nations in 1727 to control the tribes in this vicinity, proved to be helpful in establishing friendly relations between the Proprietors and the Indians. A Moravian Mission was established in 1747. The site of old Shamokin is not near the present


LYCOMING COUNTY
MONTOUR COUNTY
COLUMBIA COUNTY
THINK OF TO-MORROW'S HUNTING-TO-DAY!
PREVENT FOREST FIRES
KEY
County Seat.
Farm-Game Project. (Open to Hunting)
State Forest Fire Observation Tower.
Game Protector's Headquarters.
Deer Hunting
Wild Turkey Hunting
Small Game Hunting.
Grouse, Pheasant, Rabbit & Squirrel.
Railroad.
Stream.
State Game Land
Pennsylvania Route Number.
U. S. Highway Route Number.
Legislative Route Number.
Township Route. (T-393)
Delaware Run
Five Points
Dewart
Turbotville
Warrior Run
Watsontown
McEwensville
Muddy Run
Limestone Run
Milton
Potts Grove
East Lewisburg
Montandan
Chillisquaque
Chillisquaque Creek
Cameron
Chulasky
NO. 115
Riverside
South Danville
Rushtown
Watertown
Sunbury
SUSQUEHANNA RIVER
WEST BRANCH
PENNA R.R.
READING CO. R.R.


Sunbury
Hamilton
Stoningston
Paxinos
Shamrock
Farnsworth
Seven Points
Weigh Scales
Sunny Side
Cabel
Bear Gap
Natalie
Uniontown
Trout Run
Coal Run
Marion Heights
Atlas
Mount Carmel
Shamokin
Cole Run
Kulpmont
Ranshaw Run
Locust Gap
Locust Summit
Excelsior
Marshallton
Kulps
Edgewood
Ferndale
Fairview
Burnside
Gowen City
Doutyville
Helfenstein
Locust Cr.
Trevorton
Gottshalls
Dornsife
Raker
Zerbe
Selinsgrove Junction
Asherton
Hallowing Run
Mile Run
Augustaville
Fishers Ferry
Baile Run
Dalmatia
Hickory Corners
Malta
Mahantango
Herndon
Red Cross
Rebuck
Greenbrier
Leck Kill
Line Mountain
Schwaben Creek
Mahanoy Cr.
Mandata
Urban
Snow Creek
Hebe
Creek
NO. 84
NO. 165
SUSQUEHANNA RIVER
SNYDER COUNTY
SCHUYLKILL COUNTY
DAUPHIN COUNTY
JUNIATA COUNTY
PERRY COUNTY
PENNSYLVANIA
GAME COMMISSION
NORTHUMBERLAND
COUNTY
PENNSYLVANIA
Scale in miles
L.A.M. '54

town of that name, but between Northumberland and Milton. In 1756, after Braddock's defeat, with the French and Indians menacing the frontier, Fort Augusta was established on the site which later became Sunbury.

As an outpost of settlement, the county figured prominently in the American Revolution as a defense bastion in addition to furnishing troops for Washington's armies. Fort Muncy, then in the county limits, and Fort Freeland, in addition to Fort Augusta, were important strongholds. The attacks of the British and Indians, culminating in the Wyoming Massacre of July 3-6, 1778, led to the Great Runaway and the virtual abandonment of the region by white settlers.

Northumberland has many towns of historic interest. Sunbury, laid out in 1772, had for its first house one built by John Lukens, Surveyor-General of Pennsylvania. A ferry across the river there was chartered in 1772. Northumberland borough was laid out the same year, though the first house had been built about 1767. Its most noted resident was Dr. Joseph Priestley, discoverer of oxygen and one of the great advocates of freedom in his time.

Recreation—Fishing

Fishing waters (name of stream or lake, fish stocked, location and length or area of stocked waters) include: Chillisquaque Creek, Black Bass, Montandon, Rt. 45, 6 miles.

Recreation—Hunting

Northumberland County provides good small game hunting, particularly on farm game species. Four large Cooperative Farm-Game Projects are located here, totalling 28,496 acres. In addition, three tracts of State Game Lands, open to public hunting, are found as follows: A portion of Number 115, near Chulasky, covering over 600 acres; Number 165, near Trevorton, totaling 1,104 acres; and Number 84, running across the entire southern portion of the county, totalling 7,807 acres. Some deer hunting is provided in the wooded sections.

Pa. Dept. of Commerce Photo



Why Field Trials?

By Horace Lytle



Hal H. Harrison Photo

SOME years ago the late Ralph Sutton and I were driving in his car from Pittsburgh to Du Bois. It was a delightful trip and we had a memorable visit while humming along. We were headed for a field trial at which I was to be one of the judges; and, although this trial was to be run on pheasants, Ralph and I talked mainly of grouse.

"Until I had with my own eyes seen enough of our top grouse trials to learn differently," he said, "I had never believed, and no one could have convinced me, that anything but a slow, close, cautious dog could handle grouse. Now I know that a fast, bold, buoyant dog—sure of his nose, and rock-steady on point—will beat the daylights out of the creeping-kind that my pals and I used to believe in."

Which brings up a point: Almost without exception, field trial fans are "graduates" of the hunting fields. This is true whether their special fancy may be beagles, spaniels, retrievers, or pointing dogs. What's more—an interest in the trials does not mean a lessened interest in hunting. Quite to the contrary! It may—and usually does—mean a switch of interest to a different *type* of dog. Field trialers seek what has come to be known as a "class" dog—one whose work really sparkles, in every phase of performance. This has two valuable angles: (1) It gives hunters something *extra* to enjoy and appreciate, besides the mere amount of game bagged; and (2) that very fact tends to develop the most ardent kind of conservationists.

Field trials, for all breeds, have been expanding almost beyond belief. Where there were but a scattered few events 75 years ago, today there are thousands. Even so, there are still too many hunters who are missing the manifold pleasures that competition has to offer. Thus it is mainly to those of you who fall in this group that we are trying to aim our thoughts in this article. And the writer may be in an especially good position to do this, he thinks, for the very simple reason that—after seeing his own first field trial—he was a skeptic of the first water! Not understanding—hence not appreciating—

the enthusiasms of the fanciers we met at that first trial seemed but little short of silly.

Thinking back on it now, and realizing all the pleasures field trials have meant to me since, it may be that my own first actual participation was just plain lucky. I was a cocky young cuss and finally was prompted to enter a beloved Setter bitch in a trial not far from home. And, when it was all over, the judges named her for third! Frankly, I've known many thrills in my time, in various sports—but never one even remotely to compare with that first field trial placement. It sent my spirits soaring so high that it was a long time before I even started to come back to earth. I was "bitten by the bug" then and there—for which I've been thankful ever since.

It could have been otherwise—and is in some cases. Had my bitch run unplaced in that first trial, would I have kept on and continued to try? My feeling is that I would have—that I'd have been but more determined than ever to "show 'em." Yet that can't be proved—it would be but conjecture—for that's not what happened. That is, however, how some potentially fine prospects for the game are lost to it: their first few tries are unsuccessful and they get too-quickly discouraged—in some cases even feeling bitter about their defeats. This is doubly unfortunate—not only for the quitters themselves, but also for the great game they might otherwise grace. In field trials one has to learn to take the bitter with the sweet. Above all, he must stick—come hell or high water—long enough surely to know what it's all about.

Every now and then it happens that to win the first time out, as I did, may eventuate badly. To win the first time you start a dog makes it look too easy. I've known many such who, when their winning spree begins to run out, lack what-it-takes to keep on. In a sense, one's entry into field trials has something in common with child birth—there must first be the inevitable pains. But that's not against this great game! Not any more than the same thing is a vote against motherhood. There are penalties to pay, and—they must be paid. But, Oh how worth while it is to pay them!

To you hunters who have not yet tasted the sweets of this added pleasure with your dogs, I beseech this: Do not condemn until you have gone into it deeply and fully and long enough to know every angle of what it's all about. Do this, and you will live to thank me forever for this urging. And never forget this fact: that we who love field trials are hunters, too—and have been, some of us, for longer than many of you—and that we shall always be. But, for us, there has been something added; and what's been added is good.

In a publication such as GAME NEWS we cannot think of but one type of trial. We must consider hounds, pointing breeds, spaniels and retrievers. It makes no difference what kind of hunting you prefer, or what kind of canine, field trials have far more to offer than you may possibly imagine. We shall not attempt details as to the various trials. There are many ways to acquire these if one wishes to do so. We do think it advisable to skim through the list, that you may have some idea of the scope of coverage.

We must begin with the beagle. After all (according to the latest figures before us) this grand little hound ranks first in number of registrations with the American Kennel Club. Too, in the hunting field, the game for which he was bred (the rabbit) draws more ammunition than any other species—fur or feather. Beagle trials are practical, and will be kept so. There are several successful mag-



Beagle field trials have become increasingly popular in Pennsylvania. This group of participants and gallery were photographed at a Class "A" Sanctioned Trial held by the Towanda Beagle Club last September.

azines devoted exclusively to this breed. We refer to *Hounds and Hunting*, Greenfield, Ohio, and the *Beagle* Journal, Towanda, Pa. They will be glad to hear from any of you who might like specific information.

Second, we mention the cocker spaniel—if for no other reason than that he is the only breed to top the beagle in number of A.K.C. registrations. Originally an ideal small hunting dog (he even got his name for his adaptability for woodcock!) cockers had been bred-down to mere pets in America until Ella B. Moffit, some years ago, began a crusade to get them back as gun dogs again. Her enthusiasm brought results. There are today many good hunting cockers in America (as there have always been in England) and we now have a number of trials for the breed. The dog may be small to stand up against his larger cousin, the springer, but many a cocker will do just that. Besides which, his very lack of size and weight makes him mighty handy to handle, especially at fences. The National Cocker Spaniel Championship was run last December at Crab Orchard, Ill. The *American Field*, 222 W. Adams St., Chicago 6, Illinois, has recently added all spaniels to its list and will be glad to give any information pertaining either to the dogs or their trials.

Springer spaniels were the first non-pointing breed to gain gun dog popularity in this country. This came about through the vast promotion Freeman Lloyd gave them some years ago through the columns of *Field and Stream*. The success of his efforts stemmed mainly, I think, from the fact of stressing their adaptability for a mixed bag—fur or feather. Spaniels must "hup" at the flush of any game —they dare not chase—and hunters were told they might shoot rabbits

over them with impunity. Many welcomed this and thus springer popularity was launched. It has not only held steadfast—but has even increased. They now have their own National Championship. It was the writer's good fortune to attend the first one.

Spaniel trials are walking trials—naturally; and of necessity. But they are easy to follow, and there are many interesting angles. For one thing, there always is—and must be—game. Pheasants are dizzied and properly placed ahead on the course. Because spaniels have to work within gun range (since they do not point and hold game) a spaniel course is relatively short. A really good spaniel will show lots of "class" yet remain within range—and be rock-steady to flush and shot. Too, which will appeal to many, spaniel work is always consummated by the kill, followed by a perfect retrieve. Thus actual hunting is simulated to the fullest degree. And not only is there work on land (when pheasants are used) but in spaniel trials the dogs are subjected to water tests also. It was a revelation to the writer to see how the best of these dogs took to the icy waters of Crab Orchard in freezing December weather during the first two Championships he attended. The *American Field* now covers trials of this breed with splendid illustrated reports.

There is no better conservationist than a top flight retriever. And those bred for the work will usually prove superior. These include the Chesapeake, Labrador, Golden—the three most usually seen in the competitions; and both flat and curly coated, as well as Irish and American water spaniels. There is no denying that, at least in the trials, the Labrador has been proving the breed to beat, more often than not. But there can be no discounting the rugged Chesapeake, especially when it comes to water. Retriever trials involve both land and water work, with special emphasis on the latter. The writer can never forget the thrill it gave him several years ago to watch the eventual Champion take his signals and hold the line as he crossed icy-and-rough Crab Orchard Lake to make a blind retrieve on the oppo-

Cy La Tour & Son Photo

There is no better conservationist than a top-flight retriever. This Chesapeake retriever is a classic example of a rugged hunting companion.



site shore. This Labrador held so true to the line that he emerged from the water but a matter of feet from the hidden duck. To see a National Retriever Championship will fill the heart of any hunter full to overflowing.

Then there are, of course, the Foxhound trials—with their own Championships. We do not believe any of these have ever been run in Pennsylvania; but there is riding to hounds in various parts of the state. The finest looking English Foxhounds the writer has ever seen were at the Rolling Rock Country Club. The magazine for the foxhound enthusiast is *The Chase,* Lexington, Ky.

Coon dog trials have been gaining widespread interest. Perhaps no canine competitions draw greater crowds. This is especially true of the Leafy Oak Championships run annually on Labor Day near Kenton, Ohio. When these trials are run the fans flock in from one end of the country to the other. Each type of canine competition differs from the other—naturally. Whereas in spaniel and retriever trials game is killed—and must be, or there would be nothing to it—in a coon dog trial there is but the thrill of the baying pack as they follow a coon-scent trail, ending by barking treed. It can happen that the first line dog may also be first to bark treed. Not always, however. More often there may be separate line and tree winners. There may be a reason for this, which prompts us to offer a word of caution. In the perhaps natural urge to breed faster dogs for line winners, it sometimes appears that too much greyhound blood has been injected. Thus one may wonder if certain line winners have really held the trail by virtue of their own noses—or have merely head-trailed the pack. It would, we think, be a good thing for coon dog trials, in the long run, if entries might be restricted to pure-breds: Redbones, Black-and-Tans, and the like. Those interested might write The *American Cooner,* Wickliffe, Ky.

There is one spaniel breed that falls in a class of his own: The Brittany. This is the one-and-only pointing spaniel. A Brittany makes an excellent "comfortable" shooting dog. What's more, he is well backed by enthusiasts who have been conducting trials exclusively for this breed. These include, not only a Futurity but a National Championship as well. The trials are run and judged on exactly the same basis as other pointing dog events—except that the Brittany does not average to show the same extent of speed and range as pointers and setters. This will appeal to those who do not care for dogs that "take in too much territory." Many Brittanys, however, appear in pointer and setter trials—especially in shooting dog stakes—and some of them win as often as not. They are apt to "bird" themselves into the money, being superb game finders as a rule.

After the Brittany, there are two other breeds which point game, and for which special field trials have been springing up. One is the German Shorthaired Pointer, whose increasing popularity has for some years been steady, if not great. Certainly he does not lack for ardent advocates, To what extent the competitions may be able further to advance his cause would still be conjecture. But that's one of the reasons for field trials: It is through them that just such causes are advanced. It is the same with horse races—"improvement of the breed," you know. Anyhow, this much is certain: the span of field trials is such that any man can find competition to his liking; in some type of trial, if not another.

A newer German breed is the Weimaraner. When first introduced, too much was claimed for him. Now, however, extravagant claims are being tempered; and, with a great number of trials coming along for the Weimaraner exclusively, it may be

presumed that improvement will be seen. Already he has established himself for intelligence and as a hard-to-beat dog in "Obedience Tests." It remains to be seen, given time, how he may eventually fare as a hunting dog that points.

The wire-haired-pointing Griffon is a sturdy and stanch pointing dog; but, to the best of our knowledge, there are no trials sponsored at this time for this breed. He would, of course, be eligible to appear in any non-specialized pointing dog trial—the same as any other pointing breed. However, in other than strictly Shooting Dog Stakes, any breed except Pointers and English Setters are up against too Stiff a handicap.

Which brings us—last but certainly not least—to the trials for pointers and setters. As space is running out on us for this issue, however, we shall discuss this type of trial in another installment. Yet before closing out this one we wish to go back to the heading of this article: *Why* Field Trials? There are various and many whys—all, we think, sound.

Most men, we believe, prefer to hunt with a dog. It is our further opinion that everyone *should*. The added enjoyments are many. There is but little question that you will thus both find more game—and *save* more.

Actual shooting seasons, however, are of necessity shorter than was once the case—and this is by no means confined to Pennsylvania. Too, bag limits are not so liberal as was once possible. Yet many months of the year are available afield with your dog. This vastly extends the period of pleasure. The more *incentive* the greater the pleasure. Getting a dog in shape for the season may be plenty of incentive. The only trouble is it's too short lived. Doesn't last long enough. But it can be extended by the incentive of shaping a dog for, and running in, the competitions. Add months each year to your pleasure. Add to what your dog means to, and can give, you.

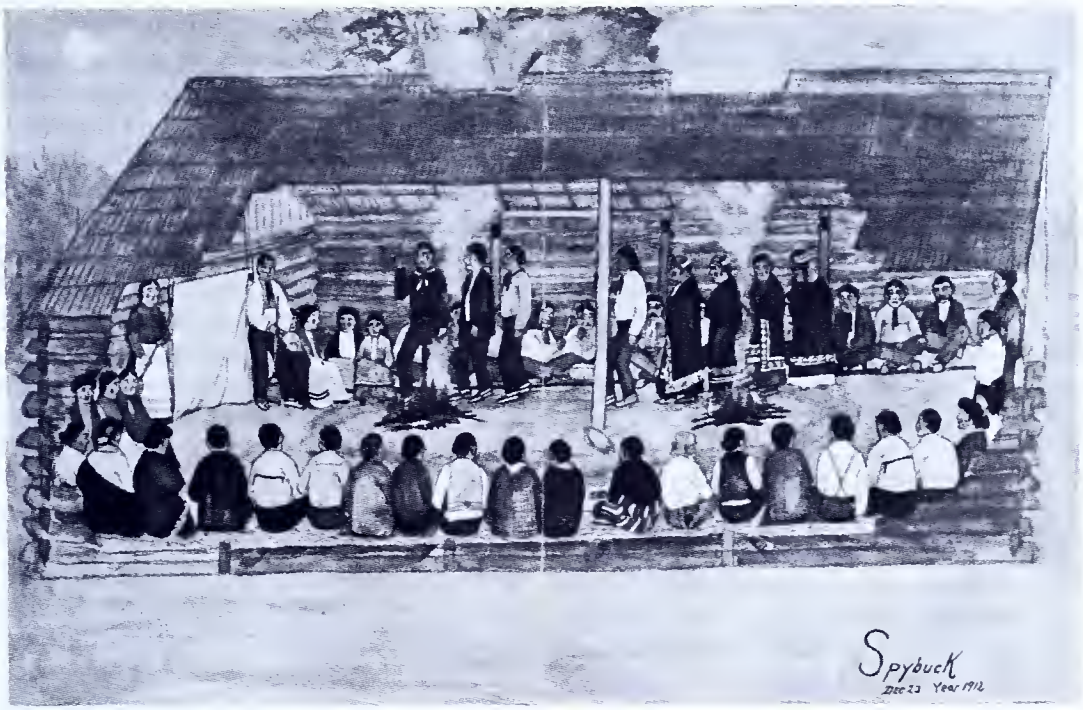
Every fellow likes to brag of his dog—and wants a dog worthy of the bragging. But you don't get enough "circulation" if this is confined to the few with whom you hunt—plus a few other listeners. Run the dog in some trials, and the world will know of him—if he really is so good as you think. And if he isn't, and you see for yourself that others are better, it'll raise your own sights. This will teach you something worth while; and a very proper envy may urge you to get yourself a dog that'll give the boys a tougher time.

You yourself will see hundreds of dogs to every one you'll ever see in a lifetime confined to just hunting. And you'll meet many more fellows of kindred spirit—most of them good ones, too. You'll find sportsmanship of the finest. You'll learn something of what you've been missing for too long. You'll learn more about dogs than you now do—much more—no matter how much you already know.

You'll come to appreciate the "class" dog as never before. You will find that *quality* of work gives greater pleasure than any other phase of performance. You'll find thrills far greater than can ever come from mere kills. You will have entered into another world of sport—of the finest kind, and vast in its offering and expanse.

And, one of these days—when you get that first win, and accept the hearty handshakes of the crowd—you'll go soaring up into the clouds higher than you've ever flown before. And you'll have found a dreamland that never fades. Merely be a good loser, and an even better winner—and good luck!

. . . *To Be Continued*



The Delaware Indian New Year's ritual, held in a log ceremonial building as painted by Earnest Spybuck in 1912.

A Brief History of the Indian Hunter

By John Witthoft

PART IV

THE COMING OF THE WHITE MAN

This was the complexion of aboriginal America when the first whites came. Farming was supreme from Florida to Massachusetts, and west to the heads of the Missouri and into the southwestern desert. The bow was everywhere the major tool of the hunter and warrior, hunting was everywhere an economic pursuit of very secondary importance, and warfare was sporadic, poorly organized, and generally indecisive. The eastern United States was a prosperous, well-populated, progressive, and peaceful countryside. We are not certain that any white explorer ever saw this pattern of native life while it was intact; if any did, he certainly left no record of it, for all that we know of such matters comes from archeology, not a scrap of it from history. At the time of the discovery of America, the centers of native life in the present United States were on the great waterways, and all of the huge settlements of the interior seem to have been abandoned before any white man set eyes on them, before the first glass bead or brass trinket came to these towns by trade. Even though no white man had trod the walks and plazas of these towns, he had brought death to the communities and their people.

Had he been there to watch, he would have seen native civilization dissolve as frost before the sun, even as it did in regions where whites had over-run the Indian settlements. All the Indian towns of western Pennsylvania, Ohio, West Virginia, and Kentucky, all the large cities of the Mississippi, the towns of the Illinois, the metropoli of the Tennessee Valley, and the huge walled cities of the Red had vanished completely before white observers appeared.

In almost every case it is nearly impossible to even decide who, among the Indian tribal remnants found later in these regions, were the inhabitants of these elder stable communities, and who were newcomers who had fled from another section.

Despite what I have said before about the rigors of native life, that represented the lot of man at the mercy of nature, and that was nothing to what was to come. Despite the fact that the prehistoric Indian buried half his children as infants, had his teeth worn out at thirty, and rarely lived to be forty, he was a part of an increasing population, he lived a short life and a worthy one, and he was subject to few infectious diseases. In Seneca tradition, the Devil had given the white man Columbus four objects, four symbols, to give the Indian. These were the bottle, the violin, a deck of cards, and a rotten human thighbone, representing the destruction of integrity by liquor, the destruction of values by frivolity, the destruction of subsistance by fraud, and the destruction of the people by disease.

Long before there were any seaside white settlements in North America, there was extensive commerce between seamen and Indians on all shores of the Atlantic and Caribbean. Indian populations along these shores were never large, for the country was poor; Indians there were all but wiped out by the time settlers came. But Indians from the nearby interior were also drawn to the coast for trade, and they and the coastal peoples were the thin population fringes of the prosperous interior of the continent. All of the microscopic parasites of humans, which had been collected together from all parts of the known world into Europe, were brought to these shores, and new diseases stalked faster than man could walk into the interior of the continent. Typhoid, diphtheria, colds, influenza, measles, chicken pox, whooping cough, tuberculosis, yellow fever, scarlet fever, and other strep infections, gonorrhoea, pox (syphilis), and small pox were diseases that had never been in the New World before. They were now among populations where no one had any immunity to them, where crowded town life favored rapid contagion. Great epidemics and pandemics of these diseases are believed to have been the causes for destruction of whole communities, depopulation of whole regions, and vast decreases in native population everywhere in the yet-unexplored interior of the continent. The early pandemics are believed to have run their course prior to 1600 A. D.; later epidemics probably never approached their severity, although some, like the 1910 smallpox outbreak among the Oklahoma Seminole, nearly wiped out whole tribes.

In every area, the earliest historic sources from the frontier period present us with Indians who had already been long accustomed to face-to-face contact with whites, who were a mere remnant of earlier populations, and whose whole way of life had been vastly distorted and damaged by the economic and physical effects of European civilization. We are gradually coming to know a great deal about Indian life in the Colonial Period, but this information is being derived from excavations of Indian

sites of this age, not from historic sources. We are becoming more and more aware that it is sheer folly to expect much reliable or significant information about Indian life from the sources of history; even where our forefathers knew anything of such matters, they neither cared or wrote. Not the historic documents, but the objects from Indian house-sites of the seventeenth century, the guns from the graves, the pox-riddled skeletons, give us a reliable picture of the past. I am here concerned mainly with the growth and development of native culture, and do not want to take much space to discuss its rapid erosion and collapse before the frontier and on the frontier. Since this is one of the most unpleasant and disagreeable topics in American history, I generally feel that the less said about the true nature and details of the frontier, the better. Let the historians keep their preposterous fairy-tales of the "empire builders," and let our modern Indian citizens forget their whole traditional knowledge of the unbelievable horrors which came with the inexorable march of European culture across the American continent.

The Three Stages In European Conquest of Eastern North America

Actually, there were three distinct stages or phases in the white conquest of North America. The first, which I have just described as the biological phase, had as its agent the microb. The second, the commercial phase, had as its agent the Indian warrior. The third phase, the frontier, had as its agents the white borderer, trader, soldier, and settler. In the biological phase, Indian-white contacts were along the seacoast, small quantities of furs and European tools and trinkets changed hands, and sailors, lice, rats, fleas, and items of barter brought devastation by disease to the sparse coastal populations and indirectly to the large populations of the interior. Iron axes, glass beads, knives, and brass scrap of this phase was carried all over Pennsylvania and New York, and some trade goods of this early period are even found in central Ohio. This phase ended in the Northeast shortly after 1600 A. D., with the establishment of permanent trading posts and settlements along the Atlantic coast and in the valleys of the Saint Lawrence, the Hudson, the Delaware, and the Potomac. The biological phase of conquest had emptied the coastal regions for white settlements, and had so weakened the interior peoples that they were never able to push the whites out.

Just beyond the strip of land along the coasts which were actually settled by whites, peoples of the interior were able to pull themselves together and form a belt of Indian military power that long held white settlement east of the mountains. In the Northeast, there were three such nations or tribes, who formed a barrier between the white settlements and the western country; they were the Huron of Canada, the Five Nations of New York, and the Susquehannock of Pennsylvania. They formed large political alliances, they consolidated their total populations into a very few large fortified towns, and they became the major agents in the fur trade. They were so situated that they controlled all entries to the west, and every fur that came out of the great Interior Basin or central Canada passed through their hands. Ravished by disease, they still kept up their population and military power by absorbing the remnants of broken tribes from the east and by adopting huge numbers of captives taken in warfare. They began the systematic conquest of their western neighbors, and huge caravans of captives, loot, and fresh beaver hides from the rivers of the west poured into their towns. They became tre-

A GRAPH TO THE HISTORY OF THE EASTERN UNITED STATES

FEDERAL PERIOD	1776 - PRESENT	Replacement of Native Races & Cultures
COLONIAL PERIOD		Decimation of Native Populations
WOODLAND EPOCH 1,000 B.C. - 1,550 A.D. — 'NEOLITHIC' TECHNOLOGICAL STAGE — PRODUCTIVE ECONOMY	LATE WOODLAND PERIOD 500 - 1,550 A.D.	Town Life · Large Populations · Decline of Hunting · Incipient Warfare · Intensive Farming · Pressure Flint Chipping · Provincialism, Little Travel & Trade · Simple Burial Ritual
	MIDDLE WOODLAND PERIOD 500 B.C. - 500 A.D.	Village Life · Elaborated Burial Ritual · First Maize · Intra-Continental Travel & Trade · Introduction of the Bow · Arctic - Asiatic Cultural Influences · Expert Flint Chipping
	EARLY WOODLAND PERIOD 1,000 - 500 B.C.	Houses · Sedentary Life · Distant Trade · Pottery & Pipes · Pioneer Agriculture · Sunflower · Amaranthus · Tobacco
TRANSITIONAL PERIOD 1,500-1,000 B.C.		Intensive Fisheries · Carved Soapstone Kettles · Canoe Life · Meat Stewing · First Pottery
ARCHAIC EPOCH 6,000 - 1,500 B.C.	LATE ARCHAIC PERIOD 4,000 - 1,500 B.C.	Spearthrower & Javelin · River Travel · Shellfish Eaten · Axes · Forged Copper Tools
'MESOLITHIC' TECHNOLOGICAL STAGE — DIVERSIFIED ECONOMY	EARLY ARCHAIC PERIOD 6,000 - 4,000 B.C.	Hunting, Fishing, Gathering · Nomadic Life Within Family Territory · Woven Fabrics & Sandals · Chipped Flint & Stone Tools · Pecked & Polished Stone Tools · Baskets & Bark Vessels · Acorn Porridge · Boiling in Barks by Heated Stones · Chopping Tools · Dog Domesticated
PALEO-INDIAN EPOCH 16,000 - 6,000 B.C.	LATE PALEO-INDIAN PERIOD 9,000 - 6,000 B.C.	
'UPPER PALEOLITHIC' TECHNOLOGICAL STAGE — HUNTING ECONOMY	MIDDLE PALEO-INDIAN PERIOD	Big Game Hunting · Lance, or Stabbing Spear · Chipped Flint Tools · Ground Bone Tools · Fluted Spearpoints · Spear Tang-edges Ground · Highly Nomadic Life · Meat Roasting · Tailored Skin Clothing · Flint 'Blades'
	EARLY PALEO-INDIAN PERIOD	



VERTICAL SCALE IN YEARS

Dates are approximate and to some degree conjectural. Other statements represent varying degrees of probability. Time has been quantified in this chart to stress historical perspective and to facilitate critical reading.

John Witthoft Aug. 8, 1954

mendously wealthy by native standards, were able to buy any and all of the tools and luxury goods which Europe had to offer, and quickly became completely Europeanized in technology, not in any other respects. By 1640 A. D. they no longer made pottery in any quantity but did their cooking in brass kettles; they no longer made arrowheads by this date, and were completely armed with muskets. These guns were turned upon peoples to the west, and by 1640 the upper Ohio and its tributaries as far west as the Scioto had been swept clean of all other Indians by Five Nations and Susquehannock war parties, and had become a mere "beaver-hunting ground." Before 1700, these war parties had swept clean to the Illinois and the Tennessee. These people had, despite their wishes, become mere military agents of European commerce. Traders did not come to their towns, but they brought their furs down to port settlements, and carried back their guns, powder and lead, swords, daggers, axes, silverware, rum, linen shirts, and brass kettles. Few white men even set foot within their territories. At the same time, the three tribes who controlled the commerce of the west were locked in combat among themselves for exclusive domination of the frontier. The Five Nations defeated and destroyed the Huron in 1648, and later destroyed the Susquehannock in 1675. By a series of accidents and changes in Russian and oriental taste, the bottom fell out of the European fur mart about 1675, and no Indians anywhere ever again achieved the wealth and power that the Five Nations had held at that time. The beaver had also been nearly exterminated in all areas within the reach of our Indians. Thus the great empty western tracks, the real "bloody ground" of American history, lost much of their previous importance, and they began to be settled by small, semi-sedentary groups of Indians of very diverse origins. Some of them were shattered remnants of once-important tribes who had long ago been torn loose from their moorings; Delaware, Munsee, Shawnee, Wyandot, Miami, and Illinois. Others were Five Nations splinter-groups, dissatisfied peoples from New York who moved into new country, some of them because they favored French rather than English interests in the growing struggle for colonial power. These pro-French Iroquois gradually came to be called the Mingo, a word more generally applied as a name for any Five Nations language. Meantime, in the middle seventeenth century, the French-British struggle of the Seven Year's War became localized in the Ohio, and once military penetration of this region had been effected, the whole trans-Allegheny realm was open to the flood of whites who carried the third phase of conquest west of the mountains, and thereby to the Pacific coast.

A frontier is not a boundary of settlement, but a boundary between two nations. Our frontiers were like the marches of Europe, regions at the periphery of white settlement and beyond the law and control of provincial or state governments; and at the weakest margin of Indian settlement, where the law and power of Indian nations could scarcely be enforced. Such tracts drew the outlawed, the lawless, the ambitious, the ne'er-do-well, and the adventurous from all directions. The violence of the border insured that it kept moving westward, as weaker Indian communities on the west gave way and as stronger white communities on the east came to extend their law into the frontier. There was never any such thing as "frontier law" in Pennsylvania, since any area within the provincial grant was subject to a highly refined legal system (and court and office structure), but there were abundant violations of

this law in marginal areas where enforcement was difficult. Indians concerned with injustices in Pennsylvania ordinarily went to the courts or the governor about them, and often received better justice than is accorded natives in Arizona or Alaska today. An American frontier, in Pennsylvania as elsewhere, is a tract beyond the reach of law-enforcement agencies, and it straddles the limits agreed upon by the nations on each side. So-called "frontier law" is actually communal violation of existing statutes which are difficult to enforce in sparsely-settled country.

Once the Allegheny was broached, America had frontiers from then until the present time. The Frontier became the mechanism by which Europe finally overran and consolidated aboriginal America, as the infantry consolidate territory already neutralized by more remote agents of warfare. Frontiers can be especially destructive of human lives, dignity, and values, and their toll is not limited to primitives, for they also bring vast destruction to whites. Their processes seem to be completely inevitable, mechanistic, and inhuman; bloodshed and fraud are impersonal and unemotional. Those of us who have observed processes and behavior on modern frontiers have been sickened by what we there learn of human nature and European personality. Lest this be considered a heretical opinion, let me point out that untold generations of missionaries have been drawn to the frontier by the vast evil apparent there, and by their desire to salvage the humanity of primitives caught on frontiers; their considered opinions are usually very similar to mine. The frontier was the last step in the closing of one of the more horrible traps that nature and fate have often sprung on a native society and culture. The Indian, like the Australian and the Eskimo, may not have been completely destroyed as a human variety or race by this series of events, but he has long been doomed as a people and civilization. Mere vestiges of his society and culture have survived to the present day.

CONCLUSION

Thus the actual history of the Indian represents a long, slow development of culture, growth of population, and striving toward the fulfillment of human potential, ended in catastrophe caused by factors beyond the understanding of either white or Indian in those times. This history is a study in tragedy rather than in injustice, romance, or empire; the sentimental interpretations so often met with, which stress those three elements, are remote indeed from a true picture of Indian history. The growth of Indian culture, the step by step gain in the arts of life and in control over nature, is much like the achievement made by many other peoples of the world, and the end of Indian culture is much like that of many other primitive peoples of the world, caught in similar traps by nature and alien societies. From the scholarly viewpoint, we are much more interested in what the Indian accomplished and in the steps by which he made gains, than we are in the circumstances of the death of his culture. We may, however, hope and trust that we will continue to build even better American cultures on the same ground as the ancient people. and that in humility and wisdom we may be able to avoid similar and more terrible traps in the future.

. . . *The End*



Congressmen Given 1954 National Awards for Conservation

Representative Leon H. Gavin (R-Pennsylvania) was honored July 15 at a special ceremony for "his distinguished service to conservation." Mr. Gavin was given a 1954 National Award and a bronze plaque at a dinner in the Statler Hotel by five national conservation organizations, the Wildlife Management Institute, National Wildlife Federation, Izaak Walton League of America, National Parks Association, and The Wilderness Society.

Representative Gavin was cited as "a man whose continuing interest since the 78th Congress has been the promoting of better management of the vast treasures held in public trust by the Federal Government and in assuring equal privileges for all who would benefit from these resources. During his long and active career in the House of Representatives of the United States, he has become known as a fearless champion of the national forest system.

"His trademarks are his firm convictions that, consistent with sound management policies, the privileges of all users of the national forests be recognized, and his unyielding stand against those who would obtain special privileges at the expense of others."

The citation continues, "He has been a forceful advocate of the appropriation by Congress of adequate funds with which to carry out the study and management of fish and game resources on these public lands."

State Trappers Hold Convention

The annual convention of the Pennsylvania Trappers Association was held at the S. B. Elliot State Forest Park, Clearfield County, on June 5th. Conferees numbering about 125 came from all parts of the State.

Discussions on legislation affecting trapping, proposals for otter protection, stocking, and fur seasons and bag limits occupied most of the convention time.

The Game Commission was represented by Roger M. Latham, chief of the Wildlife Research Division. He enumerated ways Pennsylvania trappers benefit from bounty payments, the small marsh program, state game lands, law enforcement, past research studies, and other activities of the Commission.

All the officers for the last year were re-elected. They are: President, E. R. Hill, Upper Darby; Secretary-Treasurer, Glenn Fravel, Howard; Executive Director, R. N. Hamilton, Tyrone.

TWO ARCHERY PRESERVES DISCONTINUED

At its meeting July 1 the Game Commission authorized and directed the discontinuance of Archery Preserve No. 1, located on State Game Lands 13, Sullivan County and Archery Preserve No. 2, located on the Allegheny National Forest. The Commission's action was based on the premise that these Special Archery Preserves are no longer needed in view of state-wide special archery seasons.

IN MEMORIAM



William G. Matthews

Bill Matthews, former Pennsylvania Game Protector, died at his home near Ligonier on Thursday, August 5th. His death came as a great shock to many friends and his passing is noted with sorrow by all those who knew him. Bill was appointed Deputy Game Protector, Lawrence County, in 1929, later served as a game refuge keeper near Rector, and finally did splendid work as a district game protector in Westmoreland County. He retired voluntarily from the Game Commission on August 8, 1952. Bill Matthews fulfilled his duties efficiently and with scrupulous regard for the rules. He will always live in the memories of his sportsmen friends and Commission employees as an outstanding officer and public servant.

Fur Sale Boosts Game Fund

The Game Commission's working capital is increased annually by the sale of wild animal skins seized or collected by the agency's personnel and sold to the highest bidder.

Recently, a record was completed showing the sale of confiscated furs and other pelts acquired by the Commission. It reveals $2,781.16 was realized as the highest price offered for the 2,123 skins collected.

Farm Youths Earn Wildlife Prizes

The Game Commission recently awarded cash prizes totaling $685 to 13 Pennsylvania farm boys, two of whom were winners on both the state and local levels. The winners are members of Future Farmers of America. In the past year these youths turned in exceptional records in a state-wide wildlife habitat improvement contest sponsored jointly by the Commission and the Department of Public Instruction.

The first state-wide prize of $125 went to Robert L. Ransom, of Conneautville, Crawford County. The second highest state award, $75, was won by Stanley C. Beeman, R. D. 1, Dushore, Sullivan County. Other cash prizes ranging from $50 to $15 were taken, on the division level, by: Richard A. Lehr, R. D. 1, Dover, York County; Stanley C. Beeman, R. D. 1, Dushore, Sullivan County; Richard N. Plotts, Forksville, Sullivan County; Carl Heess, Forksville, Sullivan County; Donald Bedford, R. D. 1, Shunk, Sullivan County; Lee Kaltenbach, R. D. 6, Wellsboro, Tioga County; Garry Hileman, Three Springs, Huntingdon County; Robert L. Ransom, Conneautville, Crawford County; James W. May, R. D. 6, Erie, Erie County; Byron Snyder, R. D. 1, New Florence, Westmoreland County; Glenn Beatty, Salina, Westmoreland County; Thomas McCombs, R. D. 1, Commodore, Indiana County; and William Howells, Dixonville, Indiana County.

According to officials of the Department of Public Instruction upwards of 350 boys participated last year in the contest to determine who deserved prizes for increasing food and cover for wildlife in agricultural areas. The program was reinstated this year with more than 400 Future Farmers of America participating.

1954 Pheasant Chick Program

The recent-year increase in the ringneck pheasant population in Pennsylvania is credited in part to participation by many sportsmen's organizations and farmers in the pheasant rearing program of the Game Commission.

Organizations and individuals engaged in the chick rearing endeavor have compiled an enviable record of success in the past few years. Some of these propagators have successfully raised nearly 100% of the birds allotted them. On the average, about 80% of the day-old pheasants supplied from state game farms have been reared to the 12 weeks minimum liberation age.

The record shows that between early May and late June of this year 220,485 day-old pheasant chicks were shipped from state game farms to clubs and persons eligible to participate in the undertaking.

The breakdown of this year's shipment is: sportsmen's clubs, 64,530 chicks; farm-game cooperators, rabbit farmers and farmers with land open to public hunting, 155,955. The total is close to that of each of the past two years.

IN MEMORIAM

John H. Bender, president of the Clarkson Chemical Company, South Williamsport, died on June 27th. He was widely known throughout the state as a sportsman and clean streams advocate. Mr. Bender delivered an outstanding paper on the latter subject at the North American Wildlife Conference in Chicago last March—a speech which GAME NEWS had the privilege of reprinting in the May issue.

A native of Williamsport, Mr. Bender was a past president of the Consolidated Sportsmen of Lycoming County, the Texas and Block House Fish and Game Club, and was chairman of the Clean Streams Committee of the Pennsylvania Federation of Sportsmen's Clubs. In addition, he was chairman of the volunteer Coal Pollution Committee of the West Branch of the Susquehanna River which he helped organize.

Pennsylvania has lost a real sportsman and an ardent champion of clean streams.

Over 110 years of faithful service to the Game Commission and sportsmen of Pennsylvania are represented by these officers, shown at the Mont Alto Conference last June. Left to right: Carl Benson, Game Protector, Tionesta, who has the longest record of service of any District Game Protector; Wilbur M. Cramer, record-holder among Harrisburg headquarters staff; and Maurice Sherman, Field Division Supervisor with the longest service.





OUTDOOR FUN WITH A FUTURE



Let's Try Archery

By Ted S. Pettit

ONE of the most primitive weapons known to men is making a comeback. Each year more and more people take up archery as a sport and use bows and arrows for hunting everything from water fowl to big game. Not many archers are skilled enough to hit a duck in flight, but a surprising number are successful in killing deer or bear in many parts of the country. In fact 84 whitetails were bagged by archers in Pennsylvania in 1953, and 403 deer were killed in New York State.

It's interesting that at a time when gun and ammunition development is at its height, and when good guns are available for almost anyone, that a rather primitive weapon that was in use almost as far back as history records, should be staging a return to popularity. But there's a good reason for it. Hunting with bow and arrow for many people provides more sport and more of a personal challenge. It also requires that you know your game.

In a study made in Wisconsin, the first state to legalize bow hunting, it was found that the average deer killed was shot at less than thirty yards. An archer must know a lot more than how to handle his equipment to make a successful shot at that distance. He must know the habits of deer, when he is likely to find them, what cover they seek, and how to stalk successfully. Many archers stalk their deer and try to sneak up as closely as possible before releasing the arrow. Others pick out a likely spot and wait, hoping that the deer will come to them. The last method may be the surer way, since deer generally use the same runways every day, but it is not as much fun for the bowman. The method to use depends upon personal skill and preference, as well as experience and a knowledge of woods lore.

Equipment

The basic equipment for archery consists of a bow, arrows, arm guard and glove or finger tabs. In the beginning, it's best to buy a bow and arrows, but the armguard and finger tab—and quiver if you hunt—can be homemade successfully.

When buying a bow and arrows, get the best you can afford. If possible, get the advice of an experienced archer when you select your equipment. There is a good reason for this advice—you'll be able to shoot better and have more fun with good equipment, and it will last longer than poorly made, tackle that is less expensive. Making archery equipment takes skill, just like making a good fly rod or a good gunstock. Poorly made bows will shoot an arrow, it's true, but you can't be sure where the arrow will go, and it may not even

go to the same place twice.

Bows, generally, are made of three different woods and "glass." Most experienced archers use bows made of yew for target shooting. Good yew bows may be the most expensive, but they are worth it. Osage, or "hedge" is used more for hunting bows than for target shooting, and make excellent equipment. The best known wood probably is lemon wood, since it is the least expensive. A good lemonwood bow is fine as a start, and excellent for learning. Some bows have a strip of rawhide or other fiber glued to the back. These backings cost a little more but are effective as they preserve the life and efficiency of the bow.

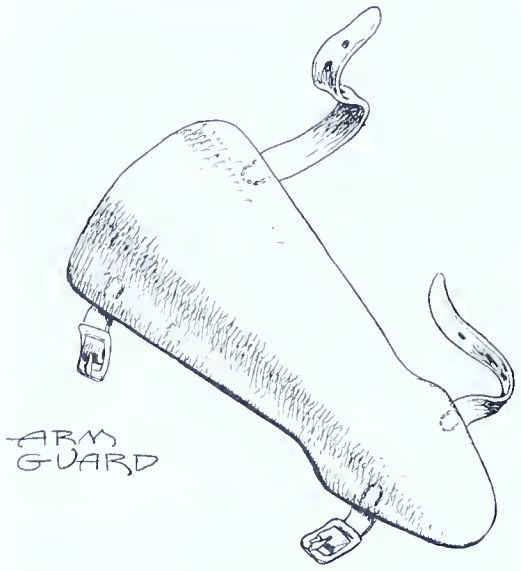
Recently bows made of "glass"—the same material of which fishing rods are made—have come on the market. From present indications they are well made, precision-manufactured bows and very satisfactory. At least one model has the advantage of being made so that it can be "taken-down" for easy transportation or storage.

But whatever kind of bow you get, don't think you're "superman" and buy one that has too strong a pull. You may hear some people brag about shooting a 60 or 70 pound bow. Maybe so, once or twice, but not for long. Get one that is easy to pull, and you'll have much more fun in the long run. Generally, boys and girls in their teens, of average build and weight do best with bows ranging from 20 to 30 pounds. Bows of this weight are very satisfactory for target shooting up to fifty yards, and with practice at 75 yards. When you learn to shoot a bow of this weight, get a hunting bow of 45 to 50 pounds. The required minimum for deer in most states is 40 to 45 pounds and you don't need anything heavier for average big game hunting. You can still use a 25 to 30 pound bow for small game—rabbits, squirrels or woodchucks.

The most important things to

This Scout has found lots of fun in field archery. Regular field courses, many with targets featuring over-water shots as shown above, provide good practice sites as well as fun for the novice archer.





think about when selecting arrows are length, material, straightness and how they are made. To determine the correct length, stand up straight and raise you rleft arm straight out from your left side. Turn your head so you look along your left arm. Have someone measure the distance from your chin to the lower knuckle on your left hand. Arrows are made in 24, 26 and 28 inch lengths. Select the length that is closest to your measurement.

The best arrows are made of Port Orford cedar, Norwegian Pine or metal such as aluminum. Arrows should be straight and with the same degree of stiffness; since the degree of stiffness and the straightness determine the flight of the arrow, all arrows should be the same so that you can get consistency in your shots. The weight of the heads should be identical too, and the fletching—the way the feathers are fastened to the arrow —should be the same on all arrows in a set.

An arm guard, that you may make yourself, is very important when you shoot for the first time ,and even after that. It protects the inside of your lower arm from the slap of the bowstring, and provides a smoother surface for the bowstring to slide along. Heavy clothing will protect your arm but the bowstring may catch and slow the flight of the arrow.

Arm guards may be made from heavy leather to which straps are riveted or sewn. The guard should cover the inside of your left arm from two or three inches from your elbow to three inches or so from your wrist joint. Thin sheet aluminum or tin also makes a good arm guard, but the edges should be bound with tapes so they will not cut you or the bowstring.

An unlined leather glove that fits your right hand snugly will protect your fingers, or a shooting tab or special shooting glove may be made or bought. The tab or glove are important to prevent blisters and sore fingers.

For hunting or roving, you need a quiver to carry your arrows. They should be large enough to hold the arrows easily, and be made of stiff leather or plastic to protect the arrows and make it easy to withdraw them one at a time, without all of them coming out. The illustrations show how to make a quiver.

Learning to Shoot

The best way, by far, to learn to shoot is to find an experienced archer to teach you. There are archery clubs scattered over Pennsylvania so it should not be difficult to find one nearby. Ask the outdoor writer on your local newspaper, or the sports editor if he knows of one. Perhaps the physical training teacher in school or one of the coaches can teach you or knows of someone who can. Visit your local sporting goods shop that sells archery equipment. Perhaps someone there can teach you or tell you of someone who can.

Finding a good place to practice is important, too. You need an open area fifty or sixty yards long and at least a hundred feet wide, where the grass is or can be cut short. You'll lose enough arrows at best,

so the area where you practice should be cleared. It's best if there is a slight hill or slope behind the target. If not, the grass should be as short as possible for a hundred feet behind the target. Your shooting area should be located too, so that you can see anyone who walks accidentally across your line of fire. Otherwise mark out the area with stakes and rope to warn anyone who might walk through.

Improvised targets may be made of two bales of hay or straw, standing on two wooden crates or boxes. Stand the bales upright and tie them securely together. Fasten a target face, piece of heavy wrapping paper or old piece of oil cloth or shower curtain with a target painted on it to the front side of the bales.

Start your shooting from about 25 yards away. Shoot from exactly the same place every time until you get so that you can hit the target regularly. Then try different distances.

Here are a few points to start with —for right-handed archers. If you are left-handed, reverse the procedure.

First, the arrow is on the left or inside of the bow and rests on top of your left hand, or bow hand. Do not hold the arrow in place with your forefinger.

Second, use the first, second and third fingers of your right hand to pull the bowstring. Don't use your thumb. The arrow fits between the first and second fingers, and the bowstring should cross your fingers just behind the "ball"—not at the first joint.

Third, your arm holding the bow should be bent slightly *outward*, not downward, at the elbow, so it will be out of the way of the string.

Fourth, always pull the bowstring back the same distance. Use arrows the proper length, and pull them back exactly the same distance. You do this by finding an "anchor point"



—a point on your face, usually your chin, where you hold your hand as you aim and release the arrow. To be consistent so that your arrows will all have the same force behind them, shoot every time from this anchor point.

Fifth, the string must be released smoothly. Do this by anchoring your hand, and opening your fingers. Your hand stays at your face and does not follow the string.

Aiming

In learning to shoot, the method of aiming that is probably best is that called "point of aim." To use this method you'll need a stake about 15 inches long with a white card tacked to the top. Drive the stake in the ground a few feet in front of the target and walk back to a point 20 to 25 yards from the target. Draw back an arrow on the string and anchor your hand under your chin. Sight with your right eye down across the arrow point at the card. Release the arrow. Shoot a second arrow. If all goes well, and your form and aim are correct, you should hit the target.

Gun Dog Training Equipment

By Herbert Kendrick

FOR any purpose proper tools are essential and this is especially true in the training of a bird dog. Although the list of necessary equipment may be small, it is extremely important for the dog and his master.

1. *COLLAR*

The collar should be the first purchase for no other unit of equipment can be as necessary. Types and styles are varied; leather, buckskin, plastic, some are quite fancy with brass-studded ornaments, and a New York store offers collars of mink and ermine.

All that is necessary, and in good taste, is a simple, plain leather strap collar, equipped with a strong buckle and ring, to which the lead, chain, or check cord may be attached.

Use the flat leather type for the short-haired dog, and the round, or rolled, type for the long-haired dog.

Whatever one you use, please securely rivet on a metal name plate, with the name and address of the owner, clearly marked thereon.

2. *LEATHER LEAD OR LEASH*

The most practical lead for the gun dog is a simple leather strap, about six feet in length, and approximately three quarters of an inch wide. A loop in one end serves as a handgrip, and an end snap fastens onto the ring on the dog's collar.

The lead is used to teach the youngster "to lead," and is invaluable when handling the dog near highways, or just taking him for a walk.



3. *FIELD CHECK CORD*

A fifty foot nylon cord, six hundred pound test, is ideal for a check cord. The small cord can be carried in one's pocket, runs smoothly in rough cover, does not stretch, dries quickly, and lasts a long time.

To one end attach a swivel-snap, so that it may be quickly fastened to the dog's collar. The other end should be free of knots or rings, in order to allow the cord to slip through cover.

This cord is not only used in the field, but also in yard training. It has many uses.

4. *WHISTLE*

Metal, bone, rubber composition, and plastic whistles are most commonly used by dog trainers. Select one which includes a cork ball, producing a rolling blast. A nylon or rawhide lace is attached to the whistle so that it may be carried around the neck.

The whistle's purpose is to bring the dog to you, attract his attention, direction, pace and range.

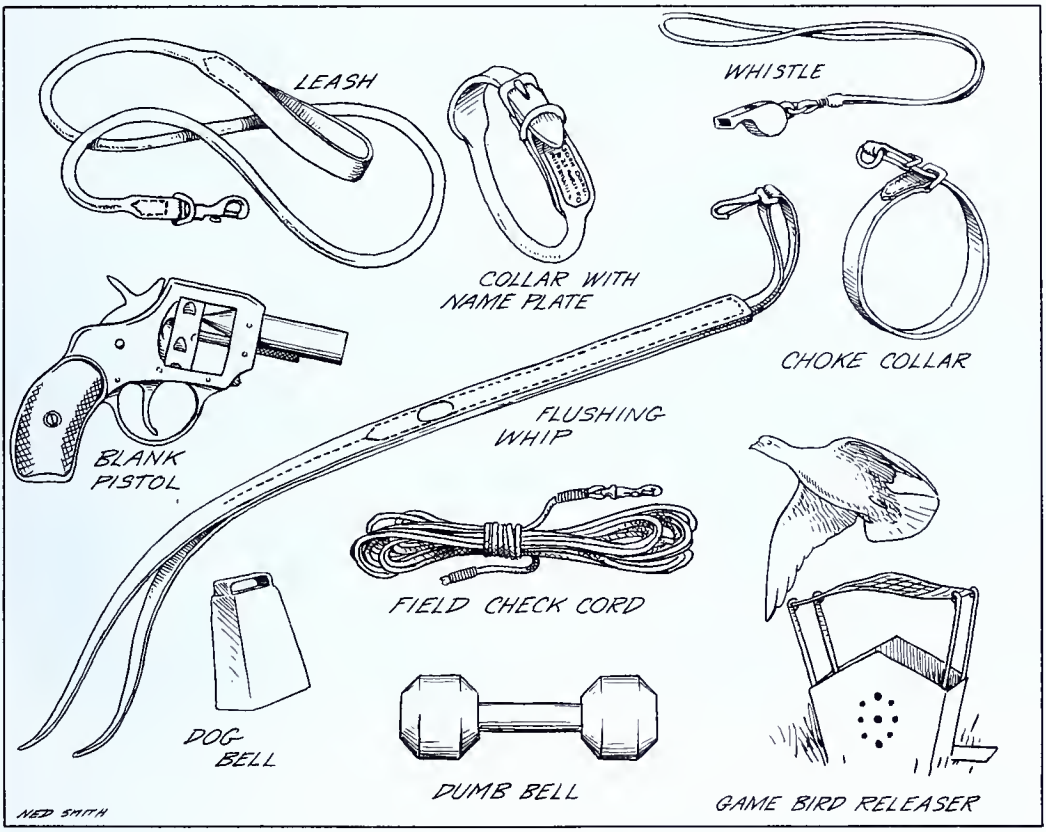
5. *BLANK REVOLVER*

The blank pistol should be used throughout the training period to accustom the dog to the report of firearms.

Gunshyness can be avoided if the pistol is used correctly, and at a safe distance, when the dog is a young puppy.

6. *BELL*

An ordinary sheep bell may be used to a great advantage if it is attached to the collar of the dog hunted in thick cover. The location of the dog is known at all times, and if he is hidden from view, and the bell ceases to ring, the hunter walks to-



ward the locality where he last heard the bell, and finds the dog on point, if his training has been successful.

7. *WOODEN DUMBBELL*

The wooden dummy or dumbbell is used for training a dog to retrieve. The center cylinder fits into the mouth, while the outside knobs serve to make it easy for the dog to grasp the object while it is lying flat on the ground.

A stripped corncob, a sawbuck, or old glove, may serve the purpose as well. If the animal shows a tendency toward being hard-mouthed, prepare a buck or dumbbell, inserting hobnails throughout the wooden cylinder.

8. *CHOKE COLLAR*

Make every effort to train the dog without the use of the choke collar. If he is a bold unruly individual, and extremely difficult to hold, then use a plain flat leather choke collar.

Never use a spike choke collar. It is an instrument of torture and will serve only to break a dog's spirit.

9. *GAME BIRD RELEASER*

For the trainer who can afford to keep pigeons or pen raised game on which to train his dog, there is a small metal trap on the market, which holds the bird until the dog points and the handler trips the trap, sending the bird into the air. This is a valuable aid to training.

10. *WHIP*

The suitable flushing whip is made of leather, about thirty inches long, one inch wide, with a twelve inch stiffener in the handle. One end has a loop for handgrip, and a snap to be fastened to the belt. The "business" end is two tapered, soft strips of leather. These strips crack together when applied to a dog's rump, causing enough noise to accomplish the desired results without severe pain.

Wing Shooting Today

By Ed Shearer

THE first cool mornings of September find our thoughts turning to another hunting season. As the leaves lose their green tinge and take on a yellowish cast, the shotgun is plucked from its long rest in the gun cabinet, snapped to the shoulder and pointed at imaginary game. This year as usual will find many thousand new hunters buying their first gun and swelling the ranks of those afield. Many of these beginners will meet with poor success and, discouraged, will quit the game. There are several good reasons for this.

I can well remember years ago when game was plenty and hunters few that the novice could meet with some success afield, as long as he knew how to load the gun and which end to point at the game. True, he was not a howling success on moving game. But he could always count in the course of the day, on a couple of trusting rabbits to stop or a fool grouse or two to fly up in a tree and sit quirt-quirting, while he deliberately aimed his gun. Thus he always had a couple pieces of game to keep him happy, and sooner or later would bump into an old timer who would tell him the facts of life.

Today's beginner must have a fair idea of the problems involved in wing shooting which applies generally to all moving game, if he hopes to have even a modicum of success. With the stiff competition and scarcity of game today, there are no trusting rabbits or fool grouse —at least after the first day. He must learn to hit running or flying game or resign himself to many gameless days afield. He further finds this art of wing shooting has many ramifications.



The hot 16-yard trap shot may suffer a decided lowering of his temperature on varied upland game. A fine performer on ducks might cut a sorry figure on woodcock or grouse or a hot grouse shot might look a bit foolish on high fast flying ducks.

There was a day when now and then you run across a man who was a top notch performer in all departments of wing shooting, but they have gone the way of the buffalo and the carrier pigeon. There is no longer the quantity and variety of game birds to furnish the experience necessary to develop the top grade all around performer. There is no substitute for experience and practice.

So the novice and a lot who are not, learn that the quickest way to successful days afield is to more or less specialize on the species of game they hunt most. As the shotgun and how to use it is the most important part in field shooting it's paramount that the limitations of the shotgun and its ammunition be thoroughly understood.

First, the shotgun is a pointing weapon which is directly the opposite of a rifle which is a precision aiming weapon.

Second, the shotgun is a short range weapon. With full choke boring the critical point in the shot pattern lies between 38 and 42 yards.



The new Winchester Model 50 is the result of years of research in the production of a self-loading shotgun with a non-recoiling barrel.

As the choke is opened up the critical point in the average reliability of the shot pattern comes even closer to the gun muzzle. Beyond 40 yards the full choke shot pattern rapidly grows increasingly undependable. The great bulk of game taken with a shotgun is killed well within 40 yards.

Third, the shotgun and its ammunition are erratic performers. The test results of even the best shotgun and the *best* loading must be expressed on the basis of average performance. A full choke barrel with good loading is supposed to average 70% of its shot load within the standard 30 inch circle at 40 yards from the muzzle. Now what happens? The first test may produce a 62% pattern while the second shot may go 72% pattern. Thus an average performance cannot be arrived at with less than ten shots. The joker lies in the fact that no shooter can foretell how near average the gun and load will deliver when a bird gets up in front of him in the field. This is the reason Mark Arie, the great clay target and live bird shot, refused to pattern any of his guns. Claimed it undermined his confidence.

Fourth, the shotgun pellet ballistically is a sad sack. Because of its spherical shape and light weight it rapidly sheds its velocity and energy. Muzzle velocity means nothing in a shot gun. Velocity is always expressed as instrumental or average velocity over a 40 yard range. An instance of this rapid loss of velocity and energy of the shot pellet, the DuPont laboratory tests show that the 3¾-1¼ high velocity load in the 12 gauge leaves the gun muzzle at an initial velocity of around 1444 ft. sec. Ten yards beyond the muzzle, velocity has dropped to 1143 ft. sec. with pellet energy of 5.9 ft. pounds. Twenty yards from the muzzle, remaining velocity has dropped to 984 ft. sec. with pellet energy at 4.3 ft. pounds. At 30 yards remain-

ing velocity 883 ft. sec. and remaining energy per pellet is 3.5 ft. pounds. At 40 yards the remaining velocity is 800 ft. sec. with remaining energy of only 2.9 ft. pounds. At 50 yards the remaining velocity 729 ft. sec. and the energy is 2.4 ft. pounds. At 60 yards the velocity is 665 ft. sec. while the remaining energy has dropped to 2.0 ft. pounds.

Should we try to obtain higher remaining velocity and striking energy by using larger sized shot, then we must sacrifice pattern density or hitting power with fewer of the large size pellets in the load. All of which brings us back to the fact that the shotgun is essentially a short range weapon, in which the term high velocity has more advertising value than fact. There is no doubt however of the value of better penetration beyond the 40 yard range.

As these DuPont laboratory figures prove, number 6 chilled shot in the so-called high velocity loading loses 54 per cent of its initial velocity in traveling only 60 yards from the muzzle—and loses 66 per cent of its remaining striking energy. So it can be said that the average sure killing range of the 12 gauge 2¾ inch chambered full choke with maximum 3¾-1¼ loading can be fixed at 50 yards.



Fifth, the man behind the gun is the most important as well as the most variable factor. There are no two exactly alike in speed of reflexes, keenness of vision, strength and temperament. As these points determine the speed and accuracy of the eye to trigger reaction, it is impossible to give the beginner any set rules on lead etc. even when the speed of the target is known.

For instance the DuPont laboratory conducted oscillograph tests on the flight of the skeet target. They found that the skeet target will travel 56 yards under still air conditions with an initial velocity of 96 feet per second. It travels 20 yards in .9 second and 25 yards in 1.2 seconds. Thus for all practical results the average skeet target flight speed is about 35 miles per hour. This however still leaves the gunner in the realm of conjecture when it comes to hitting game birds on the wing.

First, there is the great variation in the behavior and speed of flight in game birds of the same species. One grouse unalarmed may take off in a lazy, slow, low level flight, while a scared grouse may come flaring out with the speed of a rocket. One cock pheasant rising against the wind looks like a lumbering bomber while a flushed pheasant coming down the wind may look like a jet plane.

Second, the gunner is never sure of the precise range in the field. Depending on how good he is, about all he is sure of is whether the game is in range of his gun or not.

Third, when you consider the speed of reflexes of different gunners and the fact that individual reflexes are not the same on all days and conditions, the problem shapes

up like this. As the gunner is not sure of the flight speed of the game bird or of the precise range, with our reflexes of the moment an unknown quantity, it is obvious that no one can tell us. About all the gunner can do is to select the best gauge, boring and load for the job in hand and keep at it until experience teaches you the probable lead or hold. When you can achieve this on grouse two times out of five you're good. If you can do it three times out of five, you've arrived.

Recoil is a factor that must be given serious consideration, especially by the serious beginner who must do a lot of shooting in acquiring experience. No shooter can do good shooting for any length of time with a gun whose recoil bothers him. The lighter the gun with a given load the more the recoil. We are speaking now of free foot pounds recoil which is the force required to lift one pound weight to a height of one foot. This remains constant according to the weight of gun and load employed. Granting that some shooters stand recoil better than others, there is a limit to what can be endured before it effects shooting performance.

Here again we will turn to DuPont laboratory which made exhaustive research on recoil and recoil effect. It is their consensus of opinion that 28 pounds free recoil is the limit that can be endured for any considerable length of time before it effects shooting performance. That is about the recoil of the 300 magnum rifle.

Recoil effect is the unknown variable. Due to a poor fitting stock or a stock with too much drop or a too high and poorly designed comb, a shotgun of medium recoil may punish the shooter far



more than a correctly fitting gun with heavy loads. A gun with short barrels gives a heavy muzzle blast. This may give you the impression you are getting a much harder wallop than you actually are. To prove this plug your ears with cotton, take the same short barreled gun and fire a string of shots. Magically a good part of the recoil has disappeared.

The way you take recoil and the target you are shooting at has a large bearing on recoil effect. A seasoned shooter standing on his feet so that he can roll with the push and shooting at a flying target, is not recoil conscious so can take quite a bit. The same gunner shooting at a stationary target where he aims to a certain extent gets quite a different impression.

Don't try to shoot a gun with a stock that does not fit you. The result will be a lot of missed shots and the wallop it will hand you will take the joy out of life.



Hunting—Japanese Style

A former employee of the Western Game Farm, now with the U. S. Engineers in Japan, Cpl. Joseph J. Duda, sends the following information on hunting deer in Japan's Nikko National Game Area.

First you must have a license costing 1,000 yen, application for which must be made at least four days in advance of the time you wish to hunt. You must report to the officer in charge of the game area at 4:00 p. m. the day before your hunt. pick up an entrance badge and the game area guidance map. You must have permission to enter lands with rails or fences and you are not permitted to shoot in the direction of any conveyance including autos, railroads and ships.

In addition the following regulations apply: 1. No does may be taken. 2. When 50 deer have been shot, the season may be closed. 3. The number of hunters for one license period is 40. 4. You must hunt in groups, not alone. 5. The kill is the joint possession of all hunters. 6. Guns are restricted to those of small calibers, below No. 12; no shot smaller than SJ. 7. You must use beaters approved by the area manager. The hunting place and waiting spot for each group is determined by the manager. 8. You can carry your weapon loaded only at the waiting spot and then only during the beating hours, between sun-up and sundown. 10. Violation of regulations may cost you 50,000 yen and a year in the "Pokie." There are hunting areas set aside for the exclusive use of designated villagers with no foreigners allowed. The bird season opens November 1 but you can't start hunting four-legged game until December 15.

Isaac Baumgardner, Supt.
Western Game Farm
Cambridge Springs

One of Conservation's Unsung Heroes

Gentlemen :

In Hanover, Pa., there is a modest man, quiet and reserved—Charles Weaver. He is connected with the Schmuck Company there, holding a position of considerable responsibility. He is a hunter and goes into the woods regularly during season.

Sometimes this man doesn't carry a gun, but he ALWAYS carries his pockets full of tree seeds and nuts of various species. Sometimes he carries large bundles of small tree seedlings like apple, pear, etc. He is consious of the fact that wild game must have cover as well as forage and he can now enjoy seeing many, many trees of his own planting, some bearing fruit for wild game to feed upon.

He would not seek any publicity for these acts, but I was so profoundly impressed with his interest in game protection and game feeding that I couldn't resist writing you about it.

Respectfully yours,

L. I. Davidson
Towson, Maryland

Shooting Form

PART II

By Tom Forbes

THE law of gravity is inflexible. An arrow shot horizontally from a bow begins to fall as soon as it leaves the arrow rest. See Figure No. 32. Consequently the arrow always makes an angle with the horizontal and describes an arc in flight. See Figure No. 33. This arc is called the trajectory and at any distance "x" the middle ordinate (m), which is the maximum height the arrow will rise above the horizontal on its flight to the target at b, is inversely proportional to the drawing weight and cast of the bow. In less technical language as the weight of the bow increases, the height the arrow rises above the line of vision on its flight to the target decreases.

The drawing weight of the bow and the position of the anchor hand in relation to the archer's line of sight will determine the point blank range of your bow.

It is necessary therefore to hold below the mark when the game is located between the shooter and the point blank range of his bow and above the mark if the game is located beyond point blank range.

The relatively flat trajectory of the heavy bow over short distances makes it a favorite weapon in the hunting field. In addition a high anchor decreases the angle which the arrow makes with the line of sight and consequently requires less movement of the bow hand to adjust for elevation.



All archers adjust for different ranges by raising or lowering the bow hand and they must estimate the range and make the corresponding adjustment to score on the target.

A maxim among archers that can bear repetition is: "It is the man behind the bow that scores the hits." A person who acquires a bow he cannot draw comfortably is handicapped at the start. Better a bow that can be drawn easily than one that puts undue strain on the shooter. A flat trajectory is highly desirable and an aid to accurate shooting and each bowman must select a drawing weight that is commensurate with his physical limitations. The muscles used in drawing a bow are strengthened through practice and the beginner who learns proper shooting form with a light bow will find that his ability to handle the heavier hunting bow increases as his shooting muscles develop through practice. To sacrifice good form in order to draw a heavy hunting bow is fatal to accuracy. To be able to shoot accurately is the primary consideration. The weight of the bow is secondary. Too often the novice bowmen sacrifice accuracy for drawing weight.

When a bow is properly braced or strung the distance between the grip and the string should be equal to a fistmele. This is the distance measured from the flat or side of the hand to the end of the extended thumb. It is necessary that this distance remain fixed in order that the initial tension placed in the bow when it is braced remain constant if the force exerted on the arrow by the bow when re-

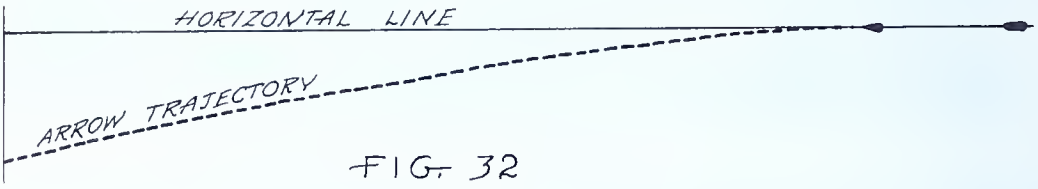


FIG. 32

leased at full draw is to impart a constant velocity to the arrow. This velocity controls the trajectory of the arrow. There are exceptions to this rule of height. In some of the modern bows the archer should be governed by the instructions of the manufacturer. To permit adjustment in the height to which a bow is strung strings are made slightly over long. To secure the exact height when a double loop string is used unstring the bow and remove the lower loop. Twist or untwist the string to change its length. By trial the correct length can be ascertained. When the bow is in use check the height at frequent intervals of time as the first indication of a weak string shows in a decrease in height. A weak, worn, or frayed string should be replaced before it breaks for two reasons. First, the accuracy of the bow is impaired as the bow string changes length and second if the string is allowed to break in use there is a good chance that the sudden release of all tension may cause the bow to rupture.

Your bow should be unstrung when not in use. Recently the manufacturers of certain bows have claimed that no injury will result if the bow is not unstrung for long periods of time. This claim is certainly debatable as the limbs in many bows will take a permanent set and weaken the cast of the bow. Regardless of the make of bow the string if kept under tension will in time stretch and consequently weaken. Never stand a wooden or laminated bow in a corner for storage. Hang it from a peg at the nocking point or lay it flat on a shelf. If your bow comes equipped with a keeper, which is a short piece of elastic cord attached to the top loop of the bow string and to the bow near the nocking point, experience indicates that this keeper should be removed. Its purpose is to prevent the string sliding down the upper limb of the bow when the loop is removed from the nock. This small advantage is offset by the danger that the keeper will cause the top limb to fly back and strike the archer if the bow breaks.

While not essential, most good bows today are equipped with a built in arrow rest. The rest makes certain that the arrow will always be discharged from the same position on the bow. If your bow is not equipped with an arrow rest, you would do well to cut a small wedge of leather, daub it with glue, and insert it at the base of the arrow plate between the wrapping on the grip and the side

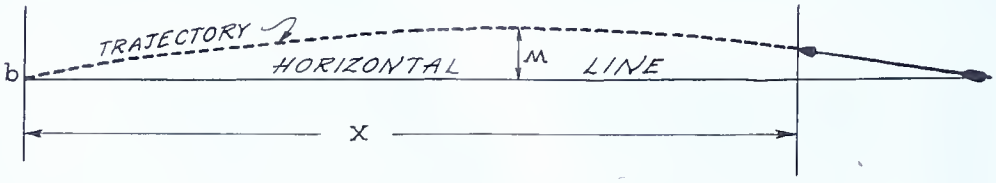


FIG. 33



Hal H. Harrison Photo

Al C. Gigler, Ambridge, is one of Pennsylvania's outstanding field and target archers.

of the bow. These and other small refinements are rungs on the accuracy ladder. Use them and you will eventually reach the top. Neglect any one of them and your ability to hit a mark consistently will suffer accordingly.

To give long and satisfactory service a bow string should be reinforced for wear at the point where the arrow and drawing fingers come in contact. This operation when performed by the archer is called serving the string. It consists of waxing a sufficient length of number 8 linen thread to serve about four inches of the bow string. Wrap the end of the thread under at the start and again at the end of the operation. Draw tight and cut off any surplus with a razor blade or knife, but cut away from the string lest you sever the newly served string.

The point at which the arrow is nocked on the bow string should not be left to chance as it will have a direct effect on the accuracy you can obtain with your bow. This point is properly located on the bow string when the arrow resting on the arrow rest forms a right angle, 90 degrees, with the bow string. A carpenter's square can be used to determine the location of this point and it can be permanently marked at the time the string is being served by taking several turns of the serving string on each side of the point at which the arrow is nocked, building up two small bumps on the bow string. Thereafter the arrow is positioned by nocking it between the bumps.

Since it is our wish to use the bow in the hunting field, we will concentrate on learning the hunter's favorite method of anchoring and aiming which we will discuss in a subsequent issue.

As beginners, our primary aim is to master good shooting form. We will strive through practice to develop a machine-like precision in the act of drawing and loosing an arrow. As we strive for and gradually develop a technique, our accuracy will gradually improve. If on the other hand we limit our practice sessions to just shooting without conscious thought of how we shoot we will never acquire the ability to score consistently on any target.

Proper form is acquired through painstaking practice and for discussion purposes can be subdivided into several individual parts or acts which when properly correlated make the act of shooting smooth and to an observer apparently effortless. We will discuss these individual components in the order in which they are brought into play, viz; stance, draw, anchor, aim, hold, release, and follow through, and more particularly as they are generally performed in the hunting field.

These instructions are written for right handed bowmen. Left handed persons substitute left for right and vice versa.

Penna. State Archery Association Annual Championship Tournaments

Western Regional Field Championship Tournament, September 12, 1954 at Washington, Penna.

Eastern Regional Field Championship Tournament, September 19, 1954 at Green Lane, Penna.

Annual PSAA OPEN FIELD CHAMPIONSHIP TOURNAMENT, Saturday and Sunday, September 25, and 26, 1954 at Charleroi, Penna.

For program of events write to Clayton B. Shenk, Exec. Sec. PSAA Ronks, Lancaster County, Penna.

HOW TO OBTAIN A SPECIAL ARCHERY LICENSE

Application forms for a Special Archery License can be obtained from any County Treasurer, any hunting license issuing agent, the Pennsylvania Department of Revenue or the Pennsylvania Game Commission at Harrisburg.

To obtain a Special Archery License, first secure your resident or nonresident hunting license, then submit a completed application and the fee of $2.00 (cashiers checks or money orders, payable to the: Pennsylvania Department of Revenue) to the Department of Revenue, Room 304, Finance Building, Harrisburg, Pa. This Department is the *only agency* from which Special Archery Licenses can be obtained.

A Resident or Nonresident Hunting License and a Special Archery License are required by *each person* (no exceptions) to hunt for male deer with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal, with bow and arrow during the state-wide exclusive bow and arrow season October 11-23, both dates inclusive except for Sunday, October 17.

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

Pennsylvania Official 1954 Open Seasons and Bag Limits

(Regulations apply for Hunting License Year, September 1, 1954-August 31, 1955)

Open season includes first and last dates listed, **Sundays excepted**, for game. **The opening hour for small game and other wild birds or animals on October 30 will be 9:00 A. M.** Otherwise, shooting hours daily are from 7:00 A. M. to 5:00 P. M., but from July 1 to September 30 inclusive, 6:00 A. M. to 7:30 P. M. (All shooting hours based on Eastern Standard Time.)

	BAG LIMITS		OPEN SEASONS	
UPLAND GAME (Small game possession limits below)	**Day**	**Season**	**First Day**	**Last Day**
Ruffed Grouse	2	8	Oct. 30	Nov. 27
Bobwhite Quail	4	12	Oct. 30	Nov. 27
Wild Turkeys	1	1	Oct. 30	Nov. 27
Ringneck Pheasants, males only	2	8	Oct. 30	Nov. 27
Rabbits, Cottontail	4	20	Oct. 30	Nov. 27
Squirrels, Gray, Black & Fox **(combined)**	5	20	Oct. 30	Nov. 27
Squirrels, Red **(closed October 1 to 29 incl.)**	Unlimited		All mos. (except Oct. 1-29)	
Hares (Snowshoe Rabbits)	2	6	Jan. 1	Jan. 8, 1955
Raccoons	Unlimited		Unprotected	
Woodchucks (Groundhogs)	Unlimited		Unprotected	
Grackles	Unlimited		Unprotected	
Bears, over one year old, by individual	1	1	Nov. 15	Nov. 27
Bears, as above, by hunting party of three or more	2	2	Nov. 15	Nov. 27
DEER: **Bow and Arrow Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal (requires hunting license and Special Archery License) by individual	1	1	Oct. 11	Oct. 23
DEER: **Regular Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal: by individual	1	1	Nov. 29	Dec. 11

NO OPEN SEASON—Hungarian Partridges, Hen Pheasants, Sharp-tailed Grouse, Cub Bears, Elk, Spike Bucks with antlers less than three inches long, Antlerless Deer, and Otters.

FURBEARERS:				
Skunks and Opossums	Unlimited		Unprotected	
Minks	Unlimited		Nov. 5	Jan. 1, 1955
Muskrats (traps only)	Unlimited		Dec. 1	Feb. 1, 1955
Beavers (traps only) state-wide	4	4	Feb. 14	Mar. 5, 1955

SPECIAL REGULATIONS

POSSESSION AND TRANSPORTATION LIMITS of legally-killed small game shall mean not more than the daily limit for the first day nor more than an accumulated total for each succeeding day of the open season for each species; but not in excess of the season limit, regardless of where held, stored or found in possession.

DEER—Even though there are two separate seasons for taking deer, a hunter may not kill more than one deer during the two combined 1954 seasons, whether hunting individually or with a camp or hunting party. A Special Archery License is required during Bow and Arrow Season, issued only by the Pennsylvania Department of Revenue, Harrisburg, at a fee of $2.00.

BEAVERS—No trapping at Commission-posted dams. **Nonresidents may not trap beavers. One person may set, tend or operate 10 traps only.** Traps must not be set on the structure of any beaver dam or house, or within 25 feet of the waterline on the structure of either thereof. Tags must be kept above ice or waterline to facilitate identification without disturbing traps. **Pelts must be tagged within 10 days after season,** and may not be sold or otherwise disposed of until properly tagged. Present them to the Game Protector in District or County where trapped.

TRAPPING—Traps for furbearers not to be placed, staked or set before 7:00 A. M. on the first day of the open seasons. The season indicated for Trapping closes at 12:00 o'clock Noon on last day. Traps must be tagged with metal name tags.

SNARES—The use of snares is prohibited in all counties except by special permit.

PENNSYLVANIA

Game News



OCTOBER 1954

10 CENTS



THE STORY BEHIND THE COVER

THE breath-taking panorama of Penn's outdoors, the flaming colors in the autumn uplands, the golden ripeness in the valley farms, the pleasure of watching America's two most popular sporting dogs make game, and a point to remember! It's all captured in a split-second on this month's cover.

Of all 22 sporting dog (not including hounds) breeds recognized by the American Kennel Club, the Pointer and English Setter are synonomous with the best in hunting for a host of American sportsmen. Here are two modern dogs, created for modern hunting methods, and tested by time and trial. Cornerstone for both, ironically, was probably the old Spanish pointer—a heavy dog mainly of hound extraction.

The liver and white colored pointer is believed to be the oldest of our modern breeds of pointing gun dogs, tracing its history back through the 15th century. The earliest dependable records of hunting them was in 1650 when they were used in the then popular sport of coursing hares. The Pointers found and pointed the quarry; then greyhounds were brought up and unleashed for the chase. Today, the pointer is valued for his intelligence, ruggedness, and ability to cover the ground in search of a wide variety of game birds. He is by far the favorite for hunting quail in the South and is commonly found scouring the Pennsylvania pheasant range.

Equally as popular, the English Setter is an exceedingly attractive, every-day bird dog. His branch of the gun-dog family tree dates back to the days when birds were taken with nets, the dogs being trained to crouch or "set" upon finding them. The setter breeds probably originated with a relatively large and leggy spaniel-type dog. Changing concepts of game bird hunting, coupled with the development and increased use of sporting arms, resulted in the training of setters to point, rather than set. Although the breed was used as an English bird dog 400 years ago, modern setter history began with an English breeder, Edward Lavarack, who developed a strain which has since become the bench-show favorite, known as orange or blue beltons from its color patterns. Later, another British breeder, Purcell Llewellin, developed a strain more famed for hunting ability. Although there are comparatively few 100 percent pure Llewellins left in this country today, most of our English Setters carry that blood-line.

Setter or Pointer—the choice is primarily one of personal opinion. But as this month's cover so clearly and beautifully shows, the point to remember is that a good bird dog enhances the hunt far beyond any measure of meat in the bag. The style, beauty, and grace of these canine companions equally matches the thrilling satisfaction that comes to every sportsmen when a bird is flushed.

PENNSYLVANIA
Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Tom L. McDowell .....Bradford

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 10
October, 1954

CONTENTS

A Duck Hunter's Method of Identifying Waterfowl 5
By Fred E. Stone

Pete Thinks About Deer Management 12
By J. K. Pasto and D. W. Thomas

Sons and Guns 19
By Bill Walsh

Golden Moments 21
By John H. Day

Build A Better Turkey Caller .. 24
By Gerald R. Hunter

Mr. Mischief 27
By Wilbert Nathan Savage

A Sportsman's Map of Monroe County 31

The Pennsylvania Cooperative Wildlife Research Unit—Training and Research 35
By Ward M. Sharp & Robert G. Wingard

★

Cover Ektachrome
Courtesy
P. Lorillard Company

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.

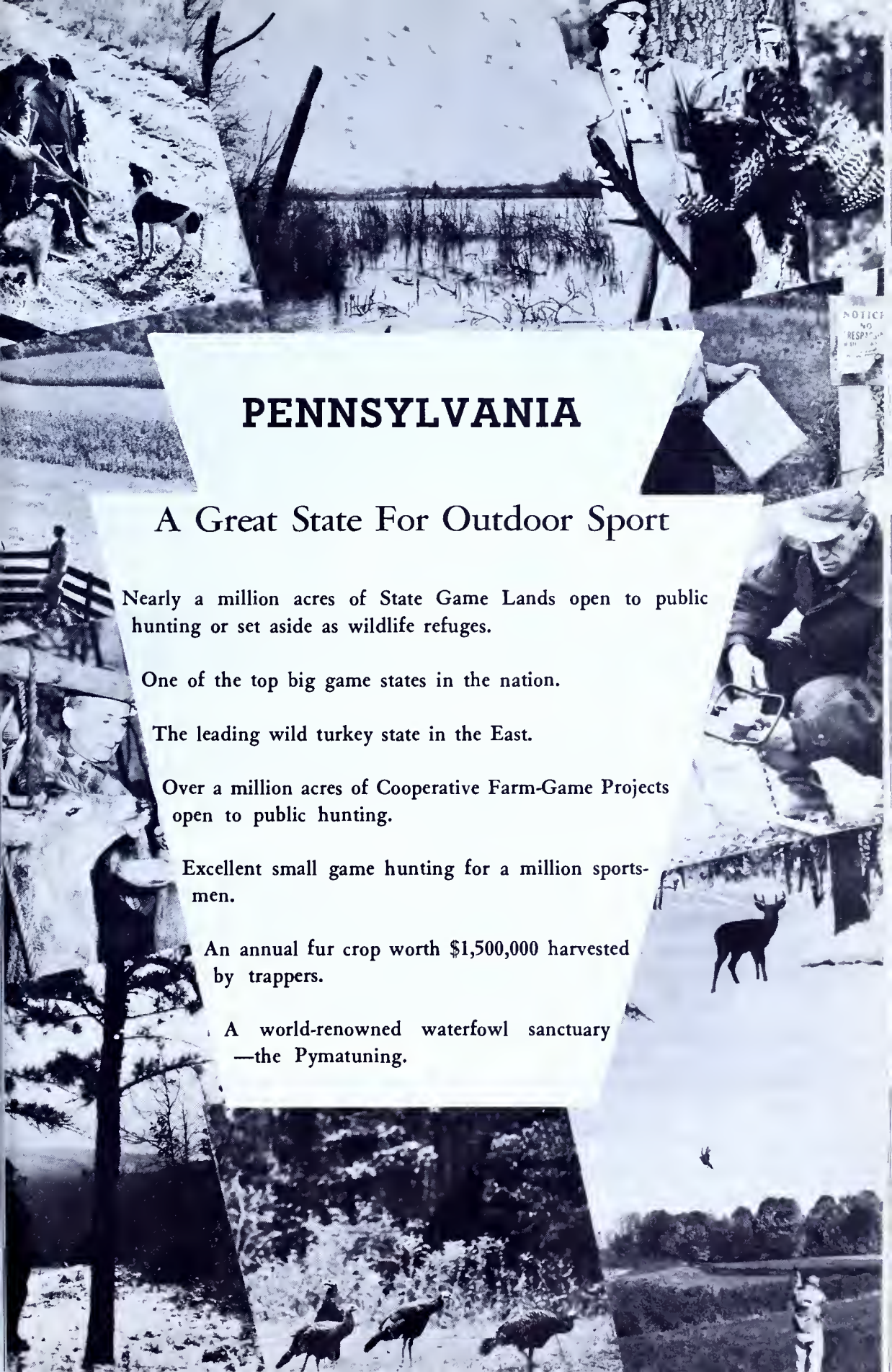
PENNSYLVANIA WEEK

October 10 through 17



A Great Time To See A Great State

IT'S YOUR PENNSYLVANIA



PENNSYLVANIA

A Great State For Outdoor Sport

Nearly a million acres of State Game Lands open to public hunting or set aside as wildlife refuges.

One of the top big game states in the nation.

The leading wild turkey state in the East.

Over a million acres of Cooperative Farm-Game Projects open to public hunting.

Excellent small game hunting for a million sportsmen.

An annual fur crop worth $1,500,000 harvested by trappers.

A world-renowned waterfowl sanctuary —the Pymatuning.



Before You Shoot

"In designating October 24th to 30th HUNT SAFELY WEEK in Pennsylvania, I am hoping to reduce the hunter casualties in this great Commonwealth.

"Our hunting casualties are few compared to the million hunters afield each year. However, most of them need not have occurred. They were caused by persons who were unduly excited, were greedy for game, or who carelessly imperilled themselves or others.

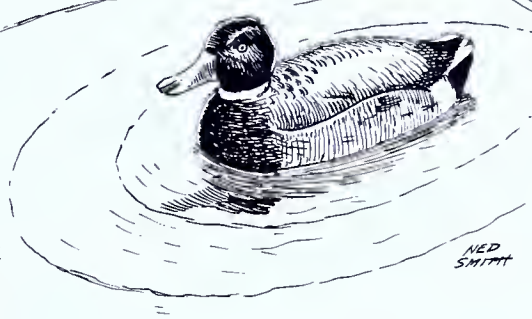
Therefore, I appeal to sportsmen, teachers, and game authorities—especially throughout the last week of October, which includes the opening day of the 1954 small game season—to teach safe gun handling and safe hunting methods to youths and all persons contemplating their first hunting trip; review and practice safety when afield; and wear fluorescent fabrics or colored hunting clothing so you will not be mistaken for a bird or animal.

The privilege of owning and bearing arms in pursuit of game is a great heritage, important to the well-being of our citizens, and to the security of our Country. But there is no justification for handling firearms in a dangerous manner."

JOHN S. FINE, Governor
Commonwealth of Pennsylvania

A DUCK HUNTER'S METHOD OF IDENTIFYING WATERFOWL

BY FRED E. STONE



IT'S easy to identify the different species of wild ducks at long range! If a few simple rules are known and kept in mind, it's hardly more difficult to distinguish any particular kind of duck from another than to distinguish any duck from a crow, a crow from a hawk, or a hawk from a buzzard. They each vary in size, have a different silhouette of body and wing, and differ in flight characteristics.

Size

All species of wild waterfowl can be subdivided into three classes—small, medium and large. The weight of these three divisions would be 12 ounces or less for a small duck, 1½ pounds for a medium size bird, and 2¼ pounds or more for a large waterfowl. To confuse the 12 ounce teal with a three pound mallard or black duck is hardly possible at any given distance.

Characteristics

With but few exceptions, any species can be identified from another in flight by its particular flight habits, speed of flight, wing-beat, and course of flight. The manner in which ducks light upon or leave the water is also an aid in identification.

During overcast fall days or in the early mornings and late afternoons of bright days, color of the duck is not much help in identifying it, especially with the naked eye. Most ducks seen at a distance of 70 yards or more will appear as brown, gray, black, or white objects. The color of a drake mallard's head, for example, is definitely green but at 100 yards, while the bird is in flight, the head will appear black under any condition other than a perfect angle and extraordinary light.

Most sportsmen know that the duck family can be divided into two main classes—the divers and the puddle ducks. The divers are well-named since they dive and swim to considerable depths below the surface to secure their food. The puddle ducks "dabble" or tip-up in shallow water while feeding. When taking flight, the divers patter or "walk" over the water; the puddle ducks jump from the water to the desired height and then fly from there. Attempting to alight upon the water, the divers appear to throw themselves in, or fly close over the surface and slide in. The puddle ducks will sit down, or lower themselves down feet and tail first.

In flight the two classes also differ, the puddle duck possessing a larger wing surface for its size and weight. Thus, the puddlers are not forced to move their wings nearly as rapidly to sustain themselves in flight as the divers. They appear to fly with much more ease and accomplish many actions in flight—turning and dodging—which the diving ducks do not duplicate. The puddle ducks will, when flying together in flocks, rise and fall, fly to and fro among themselves much more than a flock of divers. A long, parallel line or "V" of ducks high in the sky and obviously going someplace is, in most

cases, a flock of divers while an irregular bunch of ducks will in all probability be of the puddle class.

All ducks, regardless of kind, fly at considerable heights when migrating or moving from one area to another. When in search of food or a suitable resting place, however, the diving class of ducks fly just over the water surface. The puddlers fly well above the water and usually make several turns about the chosen area before alighting.

A check-list of the more common waterfowl in Pennsylvania will show 8 species of puddle ducks, 12 species of divers, the Canada goose, whistling swan, brant, scoter, coot and grebe—a total of 26 species of waterfowl. Puddle ducks include: mallard, black, pintail, gadwall, baldpate, wood duck, green-winged and blue-winged teal. The divers are: canvasback, redhead, lesser and greater scaup, ringneck, goldeneye, ruddy, bufflehead, old squaw, and three mergansers—American, hooded, and red-breasted.

Mallard

Of all the puddle ducks, the mallard can be considered one of the largest and most common. When seen in flight at a distance, the body of the drake looks gray, the head and tail black, the under-wing and breast white in good light. The hen appears over-all a mottled brown. Both sexes show a white bar on either side of the tail when sighted flying directly away from you. Mallards have a slow wing beat with a very short stroke.

Black Duck

Black ducks are nearly as common as mallards. Late arrivals are as large and a few individuals even larger than the average mallard. These ducks appear dull sooty black in color with a gray or gray-brown head and neck. The under-wing surfaces show as gray-white, contrasting sharply with the body color, an important identification aid. Black ducks are unusually shy and a good, close look at this bird afield calls for careful maneauvering.

Pintails

Pintails are slightly smaller than either the mallard or black duck. They can be identified by their long, thin appearance. The neck is longer, proportionately, than that of any other duck. Drakes appear over-all gray, the hen brown. The tail is pointed in both sexes, contrasting sharply with the square tails of most species. This species migrates out of Canada in sizeable flocks during early October. They much prefer the shallow stretches of larger streams where they can tip-up to do their feeding. The "sprig" does not "quack" like most species, but whistles with a clear, melodious note.

Baldpate

Both sexes of the baldpate are brown in appearance with a near-white breast. This is a medium sized duck. Baldpates seem very nervous and confused in flight although they are very adept with their wings. The white of their breast and under-wings is very prominent as they turn in graceful circles to select a resting or feeding place. This flight characteristic is the best clue to their identity. The "widgeon," in comparison with most species, has a very short bill which may be noted if the distance is not too great. Baldpates are also inland water birds, preferring the shallows of creeks and larger streams.

Teal

Teal are small ducks, the green-winged being not much larger than a bob-white quail and the blue-winged only slightly larger. The blue-winged teal appears gray with a white, crescent-shaped face patch and white flanks. The green-winged teal can be recognized by its small size and very quick movements. The body and neck of the green-winged are shorter



SWANS, GEESE & PUDDLE DUCKS

NED SMITH

than those of the blue-winged and the over-all coloration is a darker gray. Neither specie like large, open spaces of water. They are at home on small streams and are usually found loafing about islands and grass patches on larger bodies of water. Teal pass through Pennsylvania prior to mid-October, the blue-winged preceding the green-winged. The latter spends nearly as much time on shore, searching for food and resting, as on the water.

Gadwall

The gadwall is a medium size puddle duck, grayish in appearance. This duck usually flies in small, compact flocks, swiftly and on a direct course. The body appears slender, the wing-beats quick, and the wings long and pointed. The best means of identification is the white wing patch which is very conspicuous when the birds are in flight. The drake's black rump often shows clearly, while the yellow feet may show with glasses. Gadwalls are not common in Pennsylvania.

Wood Duck

The wood duck drake is generally considered the most beautiful of all American ducks. This duck, from the hunter's standpoint, is probably the most important single species to know. At one time dangerously near extinction and fully protected, wood ducks have come back well in recent years but hunters may still bag only one wood duck per day and may have (after the first day) only two in possession. Actually, there is absolutely no excuse for exceeding these legal limits. Wood ducks are easy to identify. They are usually found along streams with wooded shorelines, and even on larger streams or rivers, closely follow the shoreline in flight. There are three very definite aids to wood duck identification. 1. This species flys with its bill pointed down and usually keeps turning its head from side to side, as if searching the land or water below it. 2. Because the wood duck has a relatively long tail, their wings appear to be much further forward on their body than those of any other duck. 3. Finally, wood ducks do not "squack" when in flight but usually utter a distinctive call which is more a "squeal" or "peep."

Diving ducks, regardless of species, distinguish themselves from the puddle ducks by their shorter, more narrow wings. This lack of wing surface makes it necessary for these birds to move their wings more rapidly to sustain themselves in flight. They are, however, faster in ordinary flight than the puddlers.

Canvasback

The largest of the divers is the canvasback. Drakes are light grey on the sides and back, white on the breast, and appear black on the head, neck and chest. The tail is short and black. The hen appears similar except brown takes the place of the greys and blacks. In flight, this duck does not show a distinct head, due to the lack of brow, but rather, just neck from chest to bill. In migration they seem to prefer to fly in some "V" or straight line formation much more than any other species of duck. At rest they like the wide open spaces and raft in great numbers on the Chesapeake Bay where thousands of them spend the severest of the winter months.

Redhead

Redheads are slightly smaller than canvasbacks. The neck and bill are definitely shorter and the brow of the head is very pronounced. They are similar in coloration but the red on the head of this duck appears much brighter in good light than the canvasback's. It is customary for redheads to fly in compact bunches and when first alighting upon the water, they will sit in a small tight group. They repeat this bunching when taking flight. At one time this characteristic brought the redhead



DIVING DUCKS & MERGANSERS

Ned Smith

to near extinction. Duck-wise gunners took advantage of this bunching trait to make certain of multiple kills. While not as shoreline shy as the canvasback, they are definitely a duck of the open waters.

Scaup

Both species of scaup (greater and lesser—or broadbill and bluebill) are nearly impossible to distinguish apart at even short distances. The size variation is small, both species being of medium size. On the wing, both ducks conduct themselves in like manner. In the hand the greater scaup drake's head will appear black with an iridescent green sheen; in the lesser scaup this sheen is purple. The drakes are grey with head, neck, chest and tail black. The hen's garb is brown, comparable to the black of the drake. A white face patch, just back of the bill, shows if the distance is not too great. If any species enjoys "weather fit for ducks," this is it. A drizzle of rain with wind squalls serves to bring the scaups flying out of the north. In close packed bunches they fly about over the open waters doing beautiful-to-see, close-formation wingovers as they search for a suitable resting spot or food. The bays and sounds of the Atlantic coastline and Great Lakes are preferred habitat of the majority of "broadbills" and "bluebills."

Ringneck Duck

The ringneck duck, in general appearance, is a duplicate of the scaups, the identifying feature being a white ring about the forepart of the bill in both sexes. This species is not inclined to fly in flocks as do the scaup, but usually will be found in pairs and singles on the larger bodies of inland waters.

Goldeneye

Goldeneyes identify themselves definitely by the distinct whistle of their wings. On a still, cold morning the sound of the "whistlers" wings can be heard for an unbelievable distance over the water. This species is of medium size; the drakes are prominently black and white; the hens grey and white. This duck can well be considered shyest of all the divers. They keep well to the open waters and take wing at the slightest provocation. There are two species of golden-eye, the American and Barrow's. The two can be distinguished apart by the face patch of the drakes. The American shows a white, round patch just back of the bill. This mark is crescent-shape on the Barrow's. The former is much more prominent in number in Pennsylvania.

Bufflehead

Buffleheads are considered the smallest of all the ducks. Drakes are prominently black and white. The head, as the name implies, appears large and puffy, a prominent white "V" shaped patch on the head points down past the eye. The black of the head shows many beautifully iridescent colors, the breast and chest is snow white. The hen is slate-grey, her breast is a lighter grey than the back, she has a round white face patch located just back of the eye. The coming of these little divers can usually be considered a herald to the sustained or regular migrations of the different species. While there is sure to be more flights of ducks out of the north, they will be just flocks or groups of flocks from some particular area. Although not nearly so numerous as in the near past, they are still a distinct treat to the eye.

Ruddy Duck

Only slightly larger than the bufflehead is the ruddy duck, chestnut brown in color and short and heavy in appearance. This species is shorter and more compact of body, neck and head than any other small duck. Both sexes show a prominent white face patch just below the eye, Abundance and scarcity of ruddys seems to be parallel with that of the buffle-

head, although the fact they are both divers is their only relation. The ruddy comes by the name "booby duck" honestly—he can be approached within twenty feet by a boat and the only objection shown is a natural sad look as he attempts to swim away. Should he finally object enough to fly, it will perhaps be for a hundred or so yards where he can again be approached. A dangerous attitude for any wild creature interested in survival.

Mergansers

The three species of mergansers (American, red-breasted and hooded) vary in size. The American is large, near canvasback proportions; the red-breasted is of medium size; and the hooded could be considered a small duck. The males of all three appear black and white; the females are over-all grey with brown heads and necks. The bill in all species and sexes is long, narrow and nearly pointed. The long neck and bill will identify these birds at reasonable distances. The American and red-breasted both show a prominent white wing patch in flight. In general appearance the drake hooded merganser could be confused with the drake bufflehead, but in size proportions the hooded is nearly twice as large. All three species are fish eaters well able to catch and eat enormous quantities of small fish and crustaceans, they are not particular as to their fishing grounds, taking readily to most all waters. A migration date would be approximately mid November.

Old Squaw

The old squaw duck is medium in size and is our only duck of black and white color, except the goldeneye, where the white is dominant. The drakes sport a long, pointed tail, longer than that of any other species of duck. This species is rather uncommon in Pennsylvania—the Great Lakes, and coastal areas are preferred habitat. They, too, are fish eaters and can dive to unbelievable depths to secure their food. Any of the species of waterfowl which make a major portion of their diet of animal life such as fish, mullusks, crayfish, etc., can be considered unfit for the table as their flesh takes on a very strong, rank flavor.

Other Waterfowl

Swans are unmistakable in their all-white garb, extremely large size on the water, and immense, slowly beating wings in flight. Canada geese are hardly less conspicuous. On the water their large size, long neck and ever-alert attitude will mark them well. Geese differ in flight from ducks by the much slower wing beat, the habit of flying in some "V" or straight line formation, and the constant calling back and forth to each other.

Scoters are very large, sooty-black sea ducks, belonging to the diving class. Their migration through Pennsylvania takes place in but a few days as they move on to salt water bays and the ocean. Brant are nearly the same size as scoters but appear gray-brown in color and belong to the geese family. Neither species is common here.

Neither coots nor grebes belong to the family of ducks, having unwebbed feet. The coot is of medium size, sooty black in color and has a prominent white bill which is chicken-like. Grebes are small in size, appear gray, and have long, very thin necks and small heads with short, pointed bills. They are commonly known as "dipper ducks."

In Conclusion

You probably realize that experience and practice are necessary to complete any task. What has been offered here is a method. Coupled with sufficient practice, it should, after a season or two afield, make any individual well able to "call 'em as he sees 'em."



Pete Thinks About Deer Management

By Jerome K. Pasto and D. Woods Thomas

PETE was fortunate. He sat posted near his favorite deer run, waiting for the drivers to angle a deer his way. Except for those saucy evergreens, the forest was clad in winter gray. The air was still and cold. Here and there a stubborn leaf let loose and drifted crazily to the ground.

Pete had plenty of time to think. The crisp air stirred up the brain cells, or did whatever it is that makes a man see things clearly. How come, Pete wondered, was there so much misunderstanding about management of the deer herd? Just what is it that breeds these conflicts? Most disagreement arises from ignorance—ignorance of the issues involved—or so Pete correctly mused. He figured that deer hunters, landowners and others interested in the deer herd must recognize the underlying causes of trouble. Then maybe something could be done about it.

Our friend was no ordinary fellow. For years he had been a leader in promoting wise game management. He was a real sportsman who knew there were many sides to the problem—and what's more, admitted it. For the past several months his mind had flitted from one thought to another on this troublesome question of deer management. But now, as he waited for that deer to fill his gun sight, the whole problem came into focus. Yes, a man alone in the crisp air with trees as silent partners *can* get some thinking done, and here is about the way Pete sized it up.

First of all, Pete thought, a little history would give everyone a better perspective of the issue. It seems that there have been three stages to the deer management problem. The first stage existed before the white man came to this country. Nature's laws of survival maintained a balance between the number of deer, and the amount of food and cover. And though there were relentless struggles for survival which go on in all nature, there were no deer management problems during this first stage. This was because management issues are parasites that come to life only in the presence of people. No people, no problems.

Pete had the second stage figured about right. This was a time of too few deer. The game reserves were depleted, and venison was a word to be looked up in the dictionary. Act-

ually the habitat could have carried more deer than were present. This was bad because our land resources were not used to the hilt. As a result our enjoyment of the deer herd was less than it could have been with a larger herd. We simply lost out in some extra fun and enjoyment, decided Pete, as he reflected back to the time of his grandparents.

After most of our virgin timber had been cut, new forest growth created more favorable habitat conditions. In addition there were deer laws and programs to save the deer. These laws and programs were continued to the point where many folks think that we are now in the third phase of our deer problem—too many deer. (Pete himself wasn't convinced of this at the moment—he hadn't seen his deer yet.) If this is true, then we are taxing our habitat beyond its carrying capacity. This again means poor use of resources. Deer feed on farm crops and forest growth. And too, the take-home enjoyment of a herd with scrubby deer is less than with a healthy, normal herd that is in balance with the food supply.

As Pete knocked the ashes from his wind-proof pipe, he caught a glimmer of the real forces underlying the whole deer problem. He suddenly realized that there are two main threads which weave these forces together. The first is that people differ in their ideas as to what is the best use of our land. The point (and Pete

Editor's Note: This is the first in a series of five articles dealing with aspects of Pennsylvania's deer herd never before published. We believe these factual-type articles contain some of the most important, information GAME NEWS has ever featured.

"Pete Thinks About Deer Management," serves as a general introduction to all the thinking and most of the confusion about our deer population. Future articles will give the facts about deer from an economic standpoint. How much damage to farm crops is actually caused by deer? What does deer damage mean to the average farmer in terms of dollars and cents? On the other hand, how much income do deer indirectly provide farmers who board, feed, and guide hunters each year? More than that, how much money do Pennsylvania deer hunters spend while pursuing their sport, where does it go, and who besides farmers gets it? The facts contained in these forthcoming articles will surprise you! They prove, for the first time, that Pennsylvania hunting really is big business!

The authors are eminently qualified to present the facts. They are unbiased observers whose fields of interest concern the economics of agriculture. Unlike most sportsmen and wildlife managers, they had no preconceived opinions about Pennsylvania's deer herd. Dr. Jerome K. Pasto is Assistant Professor of Farm Management, Pennsylvania State University. D. Woods Thomas is Assistant Professor of Agricultural Economics, Purdue University. As a Research Fellow, Pennsylvania Cooperative Wildlife Research Unit, he spent the past two years doing research (upon which this series of articles is based) under the supervision of Dr. Pasto. Mr. Thomas received his doctor's degree for this outstanding work last June.



figured this would be a shocker to some) is that the big ingredient in the deer management recipe is *land*, not deer. After all, deer roam and live on land, and its vegetation. But land is scarce. We need it for a lot of uses—farming, forestry, living space, factory space, wildlife, and so forth. There isn't enough of it to go around. Conflicts arise because deer and other animals (including humans) struggle for use of the same land.

The second thread stitched into the problem is our concept of property rights, reflected Pete, now playing the role of a tailor with ideas for thread. The deer herd is the property of the public, yet much of the land it feeds on is private property. But even though private land owners support the herd, they generally have no greater claim on the deer than any other person. Some feel that this partially repeals our idea of protection of individual property. For landowners who feed the deer it is like a person having to buy gasoline for another's car. Furthermore, since the herd *is* public property, it would seem the public has a "right" to go after deer, even though it means trespassing on private land.

Right here, as Pete fingered the cold steel of his rifle, he was reminded of the cool way a few farmers greeted deer hunters from outside the county. He had often wondered about this, but never clearly realized why it was so. Now, for the first time, he understood that these two threads—competition for use of land, and our concept of property rights—were the real explanation of these conflicts.

The Big Conflict

The biggest conflict probably boils between the farmers and other groups, but Pete knew that this is only in certain sections of the country. The conflict is not serious in intensive agricultural areas for there are no deer. It is not serious in highly wooded areas for there is no agriculture. But the conflict is most serious in marginal areas where agriculture and deer fight it out for the same land. It wouldn't be proper, reminded Pete, for us to assume that the disagreement between farmers and deer hunters is serious everywhere. If we did, we'd be "spinning our wheels" trying to develop a good deer management program. The problem has to be tackled on an area basis.

Four Groups in the Scrap

These underlying forces bring about conflicts between four groups of people, according to the way Pete saw it. First are the folks who make a living by farming. Their goal is to reduce crop damage by deer, and this calls for fewer deer. Next are the sportsmen who want all the good deer hunting they can get, and Pete figured he was one of these—at least now he was. These sportsmen would like to see an ever-expanding herd. The third interest group includes those businessmen whose welfare partially depends on income from hunters. Like the sportsmen, they want a large deer herd—naturally. Since both the hunters and the busi-

nessmen want a large herd, the actions of one group bolster those of the other. This may make these two groups appear more important than they really are. The fourth group includes all of us, commonly called "society," and Pete put himself in this group too. The objective of society as a whole is for everybody to be as happy and satisfied as possible. Society says that we should use our land in such a way that the greatest amount of good falls to the greatest number of people. This of course is a big order, but certainly a fine yardstick to keep in mind. A pleased smile crept over Pete's face—brought on by so noble a thought from him!

The Conflict Situations

BETWEEN FARMERS AND HUNTERS. When deer run out of forage in the woods, they feed on farm crops. Farmers suffer loss of income. Not only are crops destroyed, but many farmers have to stop growing certain profitable crops that deer especially like. Besides, a few disgruntled landowners post their land, charge for hunting, parking, and so forth. This is strong evidence that many farmers would like to see a smaller deer herd.

Hunters, on the other hand, want more deer for more hunting. And a few hunters are inconsiderate. They damage crops and fences and endanger livestock. These hot spots make for bad relations all around, regretted Pete, as he unconsciously scanned for that "posted" sign that wasn't there.

BETWEEN FARMERS AND BUSINESSMEN. Like the hunters, businessmen want a large herd since this leads to more hunting, and more goods and services sold to sportsmen. Because farmers want a small herd, they don't always see eye-to-eye with the businessmen. The amount of conflict depends on several factors. In rural areas with small trading centers, farmers and businessmen are pretty close buddies, and understand each others problems. Hence the conflict will not be sharp. In areas with big cities, farmers and businessmen usually do not know each other very well, and the conflicts on size of herd very likely are pretty stiff. The degree of conflict also varies depending on what the businessmen have to sell. It stands to reason that businessmen who gain most from the hunters would disagree most sharply with the farmers.

BETWEEN HUNTERS AND BUSINESSMEN. When there is a large deer herd in an area, there are so many hunters that facilities to care for them are bulging at the seams. In this situation businessmen may tend to "gouge" the hunters, and the hunters don't like it. Pete knew this from experience. One hunting trip he ended up short of funds because rates for almost everything a hunter needed had gone up. Some even talked of the "two-price" system—one for local folks, and one for hunters.

BETWEEN ALL GROUPS AND SOCIETY. The three groups—hunters, farmers, and businessmen—conflict with the people in general.



In fact, the only reason why there is conflict in society is because there are groups within it whose objectives are different. Society would like to see these conflicts reduced to the bare minimum in order to increase the happiness of all the people. To Pete all this made sense, thought perhaps it was a little deep.

AMONG SPORTSMEN. Some deer hunters don't realize it, but a large herd may have less sporting value than a smaller one. Our friend had argued this many times. An over-populated deer habitat results in a scrubby herd with small deer, poor racks, winter die-offs, single births, diseased deer, and so forth. And another thing—when deer are numerous, the so-called "meat-hunters" are out in force. They emphasize the kill above all else, but the hunter who is interested in the sporting value of the chase must compete with them. (Pete chuckled on this one. The other guys were chasing—he was still posted and waiting for that deer!) Furthermore, personal danger to hunters is increased by mass hunting in areas with many deer. For these reasons, a large herd may yield less down-to-earth satisfaction for the sportsman than a smaller herd. But try to get very many sportsmen to see it this way!



Pete imagined how this would appear on a graph. Take a look at the figure. It is another way of getting across this idea.

As the size of the herd increases from small to large, the amount of total pleasure it affords also increases. (Follow the curved line up the hill.) Finally a point is reached (A), when a still bigger herd actually begins to detract from the sporting value of deer hunting.

Many hunters think the sky is the limit when it comes to deer. Not only will too many deer give less real pleasure, but the source of feed is destroyed, and surely this must end up with fewer and poorer deer.

At this point Pete's train of thought was interrupted by a crash in the underbrush. He rose to his feet, cocked his head to the right, and there with its head jaunty-high, stood a doe. The animal sniffed the air, and then bounded away as it caught the scent of a man. Pete settled down on the stump.

The Conflicts Run Deep

Now these conflicts Pete has been thinking about must start with some fountain of irritation. Unless we understand what this fountain is all about, we can't hope to come up with decent solutions. Remember, the basic situation is that various groups want to use land for different purposes. Therein lies the problem—deer are a side issue.

And remember too, if we use land for some special purpose when some other use of that land would yield more satisfaction, then the people in general lose out. For example, too many deer results in their overflow on farm land, and over-browsing of forest growth. This may provide more hunting, but at the expense of crop and forest damage. If the crop and timber damage is greater than

the pleasures afforded by the big herd. then clearly society loses, analyzed Pete. On the other hand, if the herd is smaller than the habitat will support, society again ends up on the short end of the stick. When there is proper balance, then things will be as hunky-dory as they will ever get.

This just about sums up Pete's thinking on the subject. It certainly doesn't cover everything. But its a starter. After all, there are more twists in this problem than there are in a can of worms. What we really should do, advises Pete, is to open our minds, consider all sides of the problem, and ditch our selfish motives. It will take some doing to acquaint folks with the issues involved. When we do, only then can we hope to come up with something that will really work. Our land is a precious resource—essential for many uses. If the deer herd which feeds upon it is managed properly, it can be transformed from a source of irritation to a never-ending source of enjoyment for all of us.

SUGGESTIONS TO HUNTERS

Henry P. Davis, in his Remington News Letter, advises hunters to be good hunting companions. On this he says:

"A good dog, fair marksmanship, a goodly number of shooting chances, and reasonable weather are all factors which contribute much to the enjoyment of a hunting trip. But, unless one has good companionship along, there is something lacking in the day's pleasure.

"But a companion who ignores the well known rules of safe gun handling, is careless with matches, cigarettes, or the landowner's property or is continually grousing about conditions or his own luck, can wreck the pleasure of any hunting trip, no matter how successful it might be from a shooting standpoint.

"Most every hunter, even a novice, is fairly well acquainted with the rules of safe gun handling. But make your knowledge obvious by your own gun handling. This gives your partner more confidence in you, particularly if he has never hunted with you before. Always handle your gun as if it were loaded. But don't have it loaded unless you are handling it. When you put a gun down, lean it against a tree, or carry it over an obstruction, always have the breech open. And never shoot at anything until you are sure of your target.

"Don't wear noisy clothes when you're still-hunting. Clothing that swishes or makes a whistling noise as you walk can be a dead giveaway to your presence in the woods. And leave that white handkerchief at home. Its use may prove a temptation to the nervous, careless shooter.

"If you're going into unfamiliar territory where there is a chance of your getting lost, get yourself a compass and learn how to use it. Area maps, showing ground contour, elevations, streams, etc., are usually available. These maps are exceedingly valuable to any sportsman venturing into strange areas."



Sons and Guns

By Bill Walsh

LET'S face it. Most fathers with sons of hunting age are complete dubs when it comes to teaching their boys how to enjoy the sport. We want the companionship of our offspring, but we'd like them to be full-blown hunters all at once, miraculously as accomplished as we are in woodslore, gun handling, and enthusiasm. We're just not teachers.

On the other hand, the youngsters look up to us and expect us to be able to tell them all we know about this sport that is so brand new and mysterious to them. We just can't let them down. Fathers of daughters can leave it up to the good wife to show the offspring how to wriggle into a girdle, apply lipstick, or stuff and roast a chicken. But men with boys have got to teach 'em how to hunt.

And it's pretty safe to say that if dad does a thorough job of instruction, the young fellow probably will never be involved in a gunning accident of his own making.

How to start and where? That's what we want to consider here.

Start at home. That's where you spend the most time together. Take a little time each evening to teach him something about the gun he's going to use and to let him get the "feel" of bringing it to his shoulder and lining it up on an imaginary target, or one you might care to pin on the wall while the lady of the house isn't looking. First teach him suspicion.

Never hand him a loaded gun. But teach him that the first thing to do on being handed a firearm is to determine whether it is loaded. Explain to him that the proper way to hand a weapon to another person is unloaded and with the action open. In the case of a double or single barrel shotgun that breaks, the gun should always be broken.

The kitchen table or cellar workshop bench are good places to show him how the gun comes apart from the stock, how it is oiled and cleaned, how the hammer falls or the firing pin is released to discharge the cartridge, and a number of other gun

information points that you take for granted but which will answer burning questions for the beginner. And during this home training, keep shells and gun at a respectful distance from each other, teaching him that guns are never loaded in the house.

Since good gun handling in the case of rifles can be learned on the target range, let's concentrate for the moment on showing our prospective gunner how to be a good hunting companion while carrying the shotgun.

Unless he's had some practical previous experience, he ought not tackle his first day afield "cold." If you have a friend who belongs to a skeet or trap club or one who can collaborate with you on the effective use of the hand trap in throwing clay pigeons, you're really in business. This friend can do more with your boy in 15 minutes than you can in a day. It's like having a driving instructor teach your wife how to drive. She learns better and there's less strain on you.

The average father-son relationship is a tender one, to be sure. But fathers have been know to lose their patience when Junior doesn't appear to be learning as rapidly as Dad thinks he should. Of course, mistakes should be pointed out to our beginning gunner —but no sign of temper—please!

If you have no hand trap, you can simulate good moving targets by rolling oatmeal boxes, old phonograph records, and other round objects down a grade to get the beginner in the habit of swinging ahead of his target in order to put it in the bag. Make certain the site of such shooting tactics is a safe one, however, and that the person rolling the targets downhill is protected from gunfire and possible ricochet.

And when the big day comes—when the season is in, young Master Hunter ought to spend at least his first half-day as an observer watching how you do it. Let him carry his gun as though it were loaded, pointing it only at game he might see; breaking it, unloading it, and placing it flat on the ground while eating lunch; and keeping it "on safe" unless game is actually in sight. If he gets through the

Safe gun training should start at home. Here Henry Nixon, Hershey sportsman, shows his son, Bill the gun he will use this fall, teaching him the "feel" of bringing it to his shoulder.



morning without any serious gun handling errors, he can have shells for his weapon the remainder of the day.

It is a mistake to take even a full grown lad hunting for the first time without any preparation. It's like throwing boys in the water on a sink-or-swim basis. They'll drown as often as they stay afloat.

In fact, a boy of 17 or 18 without previous gunning experience may have preconceived notions about sight pictures, correct lead, and other shooting dope which are incorrect and which you will have to rectify before teaching begins. The earlier you start, the better.

Tell your would-be nimrod that when the charge of shot leaves the muzzle of his gun it is travelling so fast it would only take a second for it to speed across the lengths of three football fields laid end to end. Tell him that this is roughly ten times faster than your car whizzes along at 60 miles an hour.

Tell him that even the puniest of rifle cartridges, the lowly .22 rimfire, is making time faster than a thousand feet a second, and that some high-high-power rifles require less than three seconds to put a mile between them and the rifle muzzle. Remind him that some of these sporting weapons, because of the expanding characteristics of the projectiles in the cartridges they use, are even more dangerous to life and limb than the military rifles and ammunition used by the armed forces in World War II and in Korea.

When you're finally ready to take him into the field, go it alone with him the first time or two so you can point out his faults without the embarrassing presence of a third party. Besides, the others in the party may not realize as well as you how to treat the beginner and it's important that he likes hunting from the beginning without any unfavorable influences at work.

Here's a summary of the most important lessons he should know before he is "graduated" into grown-up hunting company:

That guns are always carried unloaded and preferably cased while in automobiles.

That the "safe" on a gun is only a mechanical device and can fail.

That the "safe" is kept on until game is actually to be fired at.

That the barrel should be inspected for obstructions before loading—each time.

That the gun is never pointed at any living thing except game that is in season.

That it is not permissible to shoot at game that runs or flies back through a line of hunters.

That he should never shoot at a game animal obscured by brush, saving shots for game than can be clearly seen and cleanly killed.

That, when crossing a fence, he should unload the gun, break it or open the action, lay it on the ground, then pick it up and reload it after he has crossed the fence himself.

That once is too often to hunt with an unsafe gun handler—that this person should not be invited next time and told why.

That regard for the property on which he hunts is as important as the rules of safe gun handling.

If you can do this much for your boy—or someone else's boy if you have none of your own or if you know of one who has no father—then you have started a lad on the right track.

And later, when the important fundamental principles of good gun handling are a part of him, make sure that you impart to him a love of the land, a regard for its future, a liking for the sport as contrasted with a greed for the game involved, and a feeling that this grandest of outdoor sports belongs to him only so long as he keeps it clean and above board.

Outdoor Reveries



Golden Moments

By John H. Day

THERE'S always something going on in the timberlands. Even during those golden moments when all the countryside lies in breathless quiet and the whole world hearkens to the Still Small Voice, the endless action of the turning year rolls on. All the world's a stage in the open, and at the appointed cue each actor plays his bit, fulfilling the destiny of seed time and harvest. Though the silence seems complete insects dance like glowing motes in the slanting sun rays, thunderheads burgeon in the blue vault overhead and the pulse of the land beats steadily.

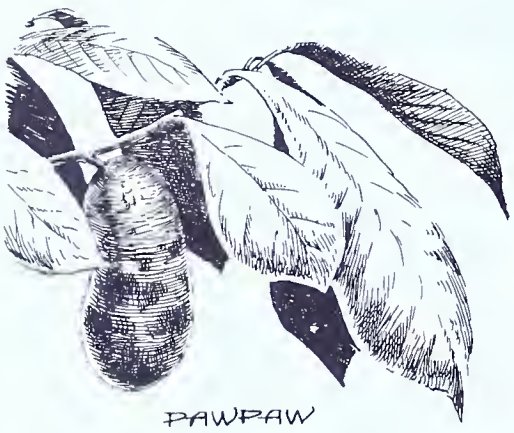
Tired by a gruelling climb through the October hills, we sprawled at ease on a dried leaf couch and cultivated the art of lazy repose. The floor of the forest was tinder dry, ready to explode into angry flame at the first careless handling of cigarette or lighted match. Overhead towered a huge black oak, a "corner" tree marking the boundaries of local land holdings.

As soon as the uproar of our passage through the brittle leaves had subsided, the woodlands assumed the quiet, brooding air of expectancy, of waiting, which is the greatest charm of the timberlands. Here the countryman finds peace which passes his clumsy understanding, and which lures him back, again and again, to these hidden wayside sanctuaries.

As we lay there soaking up the good warmth of ground and leafy couch and fervent sun, we became aware of all sorts of activity around us. Furtive scurryings in the leaves signaled the nervous passage of wood mouse or chipmunk. The casual journeying of a gray squirrel sounded like a team of horses in those resounding leaves. An occasional acorn would drop with a racket calculated to wake the dead.

In the edgings we had heard the last brave chorus of the crickets, singing their way into the oblivion which will be theirs one hard freeze soon. Here among the trees we had no such chorus, only the vagrant buzz of a passing fly, and the imagined humming of the few bees still active in the oak far overhead. A dozen birds flew across the ridge, passing directly above us. The noise of their passage was a novel break in the quiet of the afternoon.

Each falling leaf actually created a



noisy disturbance when it settled into the tinder dry mulch on the forest floor. We would hear one in a crash landing to our left, then another far to the right. An occasional leaf would drive against the taut wire fence leading from the corner oak, twanging that resounding wire like a vibrant fiddle string.

Who can tell when a leaf breaks its hold upon the parent tree where its resting place will be? It planes downward, floating now in this direction, now in that, until at last it halts perhaps fifty, perhaps a few hundred feet from its home base. Soon the combined action of sun and water and oxygen will break it down into inorganic substances and it becomes part of the earth's mold.

The countryman sees in the falling leaf a similitude to the lives of all mankind. As the leaf, so is man torn from the parental roof tree, borne hither and thither by the blasts and eddyings of fate, finally to find a resting place in the earth and yield back to her the elements which are her own.

We hobnobbed with the clouds as we lay there on the sunlit ridge. Down in the valleys the countryman finds the world is so much with him as to discourage the upward glance. But on the ridges nothing is taller than the vision save the blue zenith and the white flotilla of the clouds.

As though to put the final stamp of perfection to the gorgeous day, an eagle moved into the blue vault overhead, circled and soared and lazily rode the updrafts. The revealing sunlight spotlighted his white head as he circled and wove another golden thread into the magic loom of Autumn.

The countryman who rambles joyously across the hills in all months and all weathers gives his allegiance to the whole calendar. He can't afford to play favorites, for each month brings its own special touch to the outdoors scene. But pin him down and he'll have a hard time dodging genial October days as among the year's best. For when October comes on stage and Autumn walks the copper-colored world in scarlet shoes, then is the perfected ripeness of the year displayed in all the fullness of it glory.

October means walnuts and butternuts, pawpaws and persimmons and hazelnuts, hickory nuts and bittersweet. It used to mean chestnuts and stained hands on the youngsters who one time knew their way around in "brown October's wood."

Something terrible has happened to these kids. Television and Saturday matinees and the easy dime for a bag of peanuts have given them a pale synethic substitute for wholesome, carefree frolicking under genial skies in friendly woods and sun-tanned fields. It's probably too much trouble to gather and hull and dry walnuts any more. And then you have to go to all the bother of cracking them!

The countryman notes the yellowing leaf among the boughs, sniffs the smoky air that hints of frost at dawn, and fairly bursts at the seams in his eagerness to slip the bonds of his workaday world. October's wayside trails are irresistible when "Autumn sets the maple glory blazing" on the hills. One lung full of zesty October air, preferably with a balsam or hem-

lock tang, can work amazing wonders with mind and spirit and appetite.

October moves with a reassuring leisureliness. The mood of the outdoors is gracious, smiling and serene. There is time to look around and enjoy the golden moments. We are not to be hustled indecently from summer to winter. Even though there is no music left in the year's throat as the muted songsters slip quietly southward, the tenth month holds high gypsy carnival amid gorgeous, colorful pageantry that defies description.

Uncle Hairy, the forecasting caterpillar, has felt the nip of the recent cool mornings and is on the go as fast as his sixteen so-called legs can carry him. The motorist sees him everywhere along the highways, hurrying across the concrete with apparently no regard for life or limb. He is the wooly bear in the brown coat, set off with black at either end, who is said to foretell the length and severity of the winter by the relative size and position of these black and brown markings.

So far as my own observations go Uncle Hairy is quite inconsistent this fall. Among the several caterpillars who have sought a winter berth against our stone foundations are several predicting an an early winter and a late spring. Others carry the news that there will be no wintry blasts till after Christmas. Still others are wearing plain brown coats indicating no winter at all.

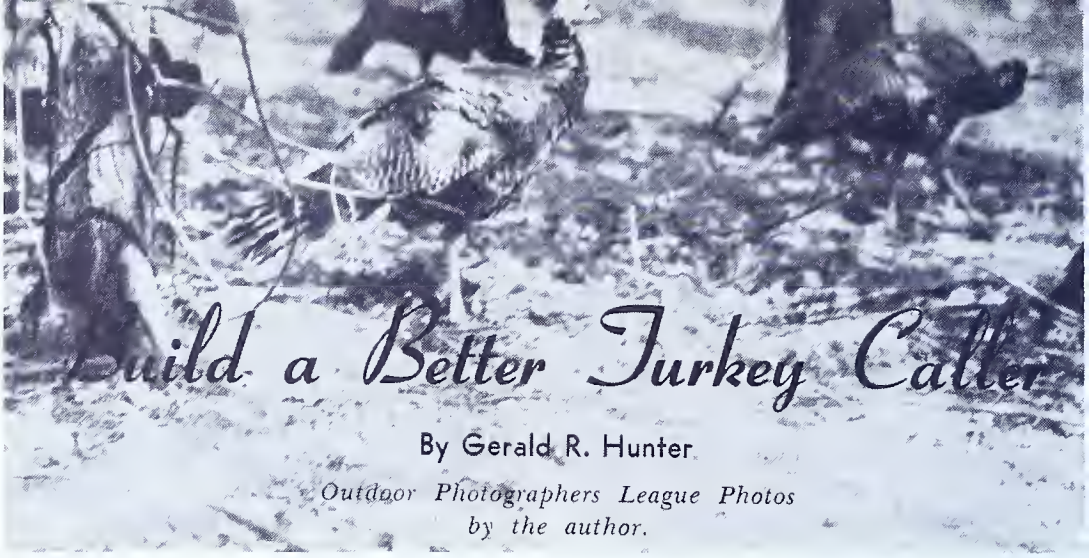
The countryman enjoys his own air show on a bright October day when the wind has the bit in its teeth and the lambent sunlight lies athwart the fence rows. From a vantage point snug against the sun-warmed bole of the most convenient tree, he notes hundreds of strands of gleaming spider web glinting and swaying in the air. From moorings along the fence these fleeting strands reach eagerly into the breeze.

Now and again one of these silken balloons takes off into the wide blue yonder, and close scrutiny reveals a tiny aeronaut skillfully riding the air waves on this free-floating glider of his own manufacture. Tiny spiders are hard at work spinning their own "balloons" all along the fence row. When the strand becomes large enough to support their weight they let go their hold on the launching platforms and ride off into a distant future, just as have their ancestors for centuries before man learned to fly.

October brings another daring airman floating southward in graceful flight. The big brown milkweed butterfly—the Monarch—follows the seasons like most of the birds. Since late August these familiar creatures have been on the go, heading with marvelous instinct for a warmer land they have never seen, since they all perish between broods. Next spring, when the sun reasserts himself, they'll come north again, some moving well up into Canada.

The yellow, rose and green of an October hillside, combined with the brilliant blue of the sky and softened by the autumn haze, are reflected in October's birthstone, the lovely opal. Opal is the symbol of hope and its month is surely a colorful symbol of the hope of the world for yet another surging springtide, as even now the buds are formed for the great reawakening.





Build a Better Turkey Caller

By Gerald R. Hunter

Outdoor Photographers League Photos by the author.

MASS-PRODUCED game callers are like mass-produced loving. They may serve a purpose, but it's difficult to put much enthusiasm or faith in them. And for the wariest bird on earth—the wild turkey—you will be far ahead to make your own caller.

There are several styles of turkey lures, but the yelper shown here, used fruitfully by my family ever since the Hunters settled Wake County, North Carolina, is the easiest and certainly the most dependable of the lot. You will do well to make yours like it.

Cedar wood has the throatiest tone, but because it is subject to dampness and breakage I prefer ash or white oak, whose notes are naturally pitched higher and sound more like a young bird urgently in need of help from a bigger turkey. The other essential piece—slate—can be found as part of a child's old-fashioned school slate. It is just the right thickness, smooth and easy to cut. Roofing slate is also satisfactory but tough to properly shape.

Making the caller is extremely simple, if you follow these instructions. Use care not to cut through the thin side because you will get a pretty sour note if you split it. The smoother you sand it inside and out the better the tone will be. In fact, a good polishing with ordinary wax shoe polish helps to exclude moisture and make the tone clear.

In the final stages, use the rasp and then a file to thin the lip to not wider than 1/16 inch, otherwise it won't want to vibrate. The entire thin side need not be so thin as the very upper half-inch or so of the lip. You will find it best to thin just a section first instead of possibly taking off too much wood all the way down.

Learn to use the caller by practicing on domestic turkeys, if available. Used right, your yelper can set a whole turkey ranch into an uproar early some morning!

By all means, practice using the caller while you hold a gun in your lap. See how fast you can drop the caller and get the gun into firing position. Some day you may have to shoot even before the caller hits the ground!

TURKEY CALLER

List of Materials:

1 piece of seasoned hardwood, preferably ash, white oak or cedar, 8″ x 1″ x 2½″.
1 piece slate, 4″ x ½″ x ⅛″.
1 piece common chalk.
2 tiny nails (for cover pins)
1 slat for cover, 8″ x 1″ x ¼″.

List of Tools:

Handsaw or hacksaw.
Drill with bits, ⅛″ and ½″.
Center punch or sharp nail.
Chisel.
Rasp.
Vise.

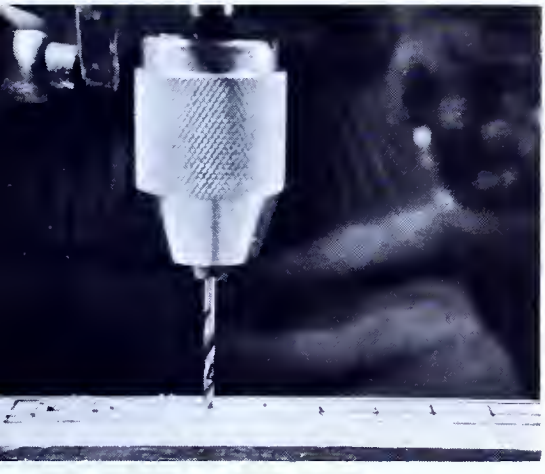


Above: To make caller, fasten wood firmly in vice and clearly lay out a space 6" x ½" so outside guide line will be 1/16" from smoothest-grained side of wood. Mark another line exactly down center, between two border lines; crossmark center line at ½" intervals. With center punch, carefully prick each intersection so guide holes will not allow drill to run out through thin side of box. Leave at least 1" clearance of wood at both ends of guide lines.



Above: Be sure drill is held vertically so as not to run out through the thin side. Drill each hole carefully to a depth of 2".

Below: Remove the remaining wood fillets with a sharp hand chisel. If you pound with a hammer, you are likely to split something. Get the bottom as smooth as you can.



Above: With a 3/32" or ⅛" drill, drill out each of center-punched marks at least 1" deep to form a true pilot for finishing bit. If wood is on the curly-grained side, you may want to use second pilot drill of ¼" size to insure accuracy.

Below: A piece of adhesive tape makes a good depth gauge for drill. Set tape so you can drill 2" deep.



Below: Smooth the inside of the "box" with a rasp, finishing with sandpaper. Irregular surfaces won't hurt the tone, provided they are smoothly contoured.







Above: Saw off excess wood so you have 1" clearance at each end of the sound hole.

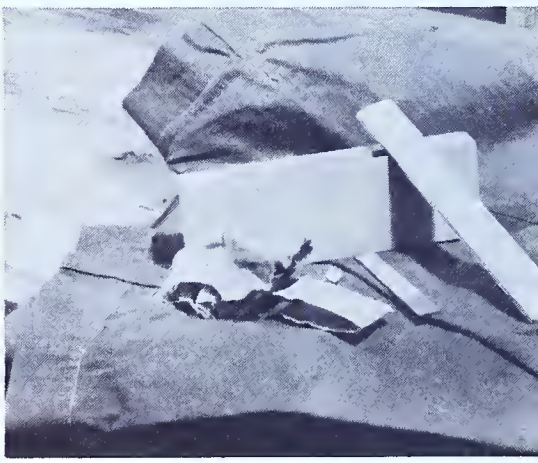
Below: Make the cover from a piece of plywood or any wood of suitable size. Put cover on box and drive a small nail through each end until it sticks to the box. Take off the cover, drive nails down flush, and clip off points to expose about ¼". With a slightly larger nail, continue prick-holes you made in box proper; then withdraw them. Your lid will now stick in place but will be easy to remove.



Above: Rub sounding side of slate and also lip of "yelper" generously with common chalk just before using. If these contact parts get too slick, or damp, you may have to use fine sandpaper to get a clean, new surface.

Below: The finished product. In rear is yelper, with cover leaning upon it. Note slate in right center, chalk and spare sandpaper in left center. At left is dark-colored cloth to stuff into box so chalk and slate won't rattle or break.





Below: Lay your slate on a smooth, firm surface and use a straight-edge to guide cutter. A center punch point makes a good cutter; you cut slate by scraping point back and forth across it. Get a groove started in one side first, then turn slate over and cut other side all the way through. A piece, ½" x 4", is about right. If necessary, polish sounding side of slate with sandpaper.



Below: How to operate turkey caller. Hold caller lightly but firmly in left hand, keeping fingers and clothing away from sounding board (thin edge of yelper). Hold slate in other hand almost at right angles to sounding board and not quite flat with top of box. This angle will vary from box to box, as will exact spot on box for best tone, so experiment for best results.





Photo by Rex Garry Schmidt, Fish & Wildlife Service

Mr. Mischief

By Wilbert Nathan Savage

NOT long ago, along a mirror-clear mountain stream, during the hushed late moments of purple-haze twilight, I saw an ambling four-footed creature that is as indigenously American as the bison, the wild turkey, or one of the prognosticating Pennsylvania woodchucks. It was a shuffling old raccoon.

Woven intimately into the texture of American life from its earliest days, the raccoon is known to every child who has ever looked with enchanted eyes at a picture of Davy Crockett, Daniel Boone, or John James Audubon. And referring to a political event of 1952, most of us will recall that one of the Democrat candidates for nomination to the Presidency was nationally publicized as a practical part-time wearer of the coonskin cap—a traditionally American headpiece for men since the very beginning of adventures on new frontiers.

But in spite of the sentiment and historic romance that is commonly associated with Mr. 'Coon, his has been a near-perpetual life of peril and forced matching of wits with man and his trained canines. Down through uncounted decades, arrows and lead pellets have sought to pierce his vital parts; deadfalls and steel traps and snares have lurked in the very spots that were dear to his heart; and natural enemies among the wildfolk often keep him slyly alert during important nocturnal journeys. Yet he is abundantly with us in some areas—scarce but tenacious and endowed with the art of self-preservation in others.

'Coons can be found today in the same general areas where men of yesteryear sought after their pelts for the making of coonskin caps, or for food, or merely for sport. Long ago the pelt of the raccoon was such a familiar part of wilderness life that they became, among the Delaware Indians, a currency: the aboriginal equivalent of a shilling. What a foreboding preface to the stylist's era

when Mr. 'Coon's pelt was held in unusually high esteem as material for overcoats (especially collegiate!), muffs, and trimming.

'Coon oil, rendered from the carcass, was used as a principal oil for many farm and home purposes and, although very light, it also was used to lubricate farm machinery. Even today it is used by some rural folk to keep leather in good condition. (My father used it generously for this purpose. Medicinally, it served in place of lard in the mixing of a "salve" used to break up attacks of croup).

The range of the raccoon is listed by Victor H. Cahalane, in his popular "Mammals of North America," as covering the entire United States, except northern Maine, the Rocky Mountain region south to southwestern Colorado, and the Great Basin. It is also to be found across southern Canada from Nova Scotia to southern Manitoba, and in southwestern British Columbia; thence south into South America. It has no counterpart in the Old World. On the basis of a per-square-mile estimate of 'coon inhabitants, Pennsylvania probably has its full quota of this masked little fellow who at once has been called a wicked plunderer and an economic treasure of no small worth.

Here we must face the fact that the raccoon is a practical epicure, with special emphasis on variety. He'll eat roasting ears today, crickets and white grubs tomorrow, crayfish, mussels and snails as between-meal snacks, and perhaps wind up with chicken for Sunday dinner. 'Coons are especially fond of eggs—turtle eggs will do—and when a bird's nest happens to contain young, they are eaten too. Mice are always appetizing; so are earthworms and water insects. The slower fishes are also caught, along with plump frogs. In the fruit and berry line, Br'er 'Coon will settle for anything from persimmons to raspberries, plums, and grapes. Like his cousin, the black bear, he will eat practically any vegetable, nut, or grain. In the raccoon's general favor is the claim by popular naturalists that the animal's appetite runs more heavily to vegetables than to meat; and it consumes quantities of insects, hawk and owl eggs, and destructive rodents.

One raccoon won the good will of a farmer when the comical creature was observed to climb sixty feet to the nest of a destructive type of hawk and, after cleaning up the clutch of eggs, he curled up and nonchalantly took a siesta in the raided nest! Mrs. Hawk finally objected with such stormy manifestations of temerity that ringtail chose to seek shelter in lower spaces.

Raccoons do not always wash their food, and the practice is said to be more in evidence among domesticated 'coons than wild ones. In the wild state, raccoons wash food only if water is very convenient. The animal's Latin name, *Lotor,* means "the washer." Many practiced outdoor observers believe the 'coon *dunks* rather than *washes* his food. Perhaps he derives pleasure from feeling the food in his sensitive "hands." At any rate, the creature will often wash meat until it becomes a white, flavorless mass, all the while playing his "fingers" over it and rolling it. And he always will wash a fish, frog, or crayfish that he's just lifted from the aquatic realm! Like a cat pummeling a mouse, the 'coon will turn and flip and roll his prey between busy forepaws, swishing and dunking it all the while. One recognized authority on animal behavior says: "With the raccoon, washing things and thus reveling in its own sensitivity has become an obsession, just as some members of the beaver tribe seemingly hope to floor the world. . . ."

How wise is a 'coon? That depends on many factors. An old 'coon that has had to cope repeatedly with



Photo by John R. Lehman

Raccoons are expert tree climbers. They prefer to den in hollow trees although will use other cavities or caves if necessary.

cleverness applied by the best hounds that ardent coon-hunters can develop, is by generous virtue of Nature's regulation an "educated" 'coon. And one of these true veterans of a hound-patrolled countryside may be fully as wise as a patriarch red fox.

Many thousands of stories have been told about stirring quests for the wily 'coon; unfortunately, sometimes, the truth is kicked around in close competition with "whoppers" related by the most imaginative fishermen. But some of the tales about the "biggest 'coon" and the "best hound" and the "longest chase" are amusing enough to temper the absurdity. Some tales that sound ridiculous are true.

For instance: seasoned 'coon-hunters have long claimed that a 'coon will sometimes lead a pursuing dog into water, and there allow the hound to tangle with him. With technique apparently reserved for Mr. 'Coon, the animal then proceeds to climb onto the dog's head, holding it underwater until the hapless hound is strangled beyond recovery. I have never actually witnessed such a tragic bit of drama, but in 1929 a respected old 'coon hunter named Harrison Casteel told me that Boss, the best 'coon dog he ever owned, lost his life in that very ignominious manner. Casteel was so provoked at the loss of his prize dog that, as far as I know, the incident put an end to his nocturnal searches for subtle Mr. Ringtail.

I am sufficiently acquainted with the raccoon to know that it frequently employs real cunning in outsmarting dogs without resorting to the extreme of arranging their demise. They will break their trail in many ways: by wading in streams; by running from one end of a horizontal log to the other and then leaping off to one side (perhaps in a tangle of tree-tops in cut-over logging areas); by traveling over stone ledges and sometimes leaping into the top of a tree that rises against the face of a steep cliff. Of course the 'coon scrambles to the ground and high-tails it out of there, while the hounds hold a wailing conference and finally decide that the poor 'coon probably fell off the cliff and suffered disastrous concussions.

It is said that, for some strange reason, it is almost impossible for a hound to catch the scent of a 'coon that is "holed up," no matter how near the entrance the 'coon may be observantly stationed. (Perhaps this is no more baffling than the fact that certain types of female waterfowl are said to bear no scent while they are nesting, thus enjoying a special kind of mysterious protection).

As a rule, the raccoon comes close to being a journeying extremist. Adult females with young may travel only half a mile to a mile from their dens at night. But unattached males and females without young may travel six, eight, or more miles during nighttime missions, finding shelter en route just before daybreak. Arkansas

'coons, live-trapped and released in a country that evidently was not to their liking, broke all records for 'coon traveling. They were recaptured twenty-seven, thirty-three, and seventy-five miles away!

One of the largest, if not *the* largest 'coon ever recorded in this country, weighed 49 pounds. A thirty-pound 'coon is unusual; and ten to twenty-five pounds takes care of figures for average weights. Sometimes the tail has six black rings, sometimes seven. But invariably, albinos excepted, it wears its quaint-looking mask of black hairs running across the cheeks and eyes, and contrasting with the grizzled gray of its coat. Indians called the 'coon "Little Masked Bear."

Raccoons do not hibernate. In the coldest parts of the regions they inhabit they may do quite a lot of wintertime snoozing when the weather is stormily whooping it up outside their warm dens. But a thaw or a calm night will bring out the fastidious hunters, and neighborhood mice and other tiny creatures are wise if they sit tight, with eyes and ears attuned to the footsteps of masked raiders!

Mid-winter is mating time, and the young, three to six in number, are born after a gestation period of nine weeks. Baby 'coons are like machine-cut miniatures of the parents, complete with "masks," and rings on their tails. Their little berry-black eyes remain closed for three weeks.

By late May the sturdy youngsters are interested in sunning themselves, and in romping and the occasional testing of the flavor of stray insects. They chip and churr and squeak and fret, keeping the mother busy enforcing discipline. For her young she is always ready to give her own life. Even when wounded, she will fight a whole pack of hounds with blind courage great enough to raise the hairs on your head and put a lump in your throat. Papa 'coon, on the other hand, is usually out sporting around, and doesn't give a darn what happens to his mate and her little ones.

'Coons walk plantigrade (flat-footed), like the bear and the badger. Their tracks resemble those of a small barefoot child. They can come down a tree either forward or backward—a feat that few animal tree-climbers can achieve with practical dexterity. In trees they are extremely agile; on the ground they can travel when pressed at a pace keenly belying their normal waddling gait. For a den, the raccoon likes a roomy cavity in a tree. But he'll settle for the abandoned burrows of other animals —maybe a woodchuck or a skunk. A deep opening in a ledge of stone, with a cozy "back room" that can be cushioned with leaves, is certain to cause the den-hunting 'coon to utter throaty little expressions of delight.

In the crisp magic of early-autumn nights, the 'coon is hunted today just as he was a dozen decades ago. Where a brook-cleft meadow merges into the dark shadows of serene woodland acres, a lone hound raises his eager voice, and the pulses of a listening father and his teen-age sons quicken. The whimsical ring-tailed raider of plump corn shocks has been routed. He's making off for his favorite retreat—where water and thickets and flat stones favor attempts to befuddle dogs young and old.

Perhaps tonight he will not be able to maintain his long streak of good fortune. Men may forget the good he has done and mercilessly see only the evil in his wanderings. But his is a stout heart and body. If peril is overwhelming and he loses the game, he will whimper for the leniency of no man nor dog. In the very throes of death he will give a good account of himself, slashing and lunging with all the splendid pluck of a champion.

Monroe County

Forty-Third In A Series

Note: This center sheet can be removed if desired, without damaging the magazine, by loosening the two center staples.

Land Area

Monroe County contains 395,648 acres, of which 307,869 acres are forested. State Game Lands total 33,255 acres and there is one Cooperative Farm-Game Project totaling 21,001 acres.

Topography

The scenic attractions along the Delaware River, including the famous Delaware Water Gap not far from East Stroudsburg, together with the high altitude and fine air, have made Monroe County one of the popular vacation grounds of the State. The Pocono Mountains here rise to elevations in excess of 2,000 feet to form a high tableland which covers a considerable part of the county.

Transportation

Railroad transportation is furnished by the Delaware, Lackawanna & Western and the Erie lines. The Lackawanna Trail (U. S. 611) and other important routes traverse the county, which has 408 miles of improved State highways.

District Game Protectors

District Game Protector John Spencer, Star Route, Mount Pocono, has jurisdiction over the following townships: Coolbaugh, Barrett, Paradise, Price, Tobyhanna, and Tunkhannock.

District Game Protector John H. Doebling, 108 Ridgeway Street, East Stroudsburg, has jurisdiction over the following townships: Pocono, Stroud, Smithfield, Middle Smithfield, Hamilton, Chestnut Hill, Ross, Polk, and Eldred.

Fish Warden

Pennsylvania Fish Warden Floyd Bachman, 49 Broad Street, Stroudsburg, has jurisdiction over fish law enforcement and fish management in this county.

District Forester

District Forester E. C. Pyle, 813 Thomas Street, Stroudsburg, has jurisdiction over the Delaware Forest District which includes Monroe County.

Agriculture

Agriculture in Monroe County is limited because of the mountainous surface of the land. There are 1,219 farms with 50,320 acres under cultivation.

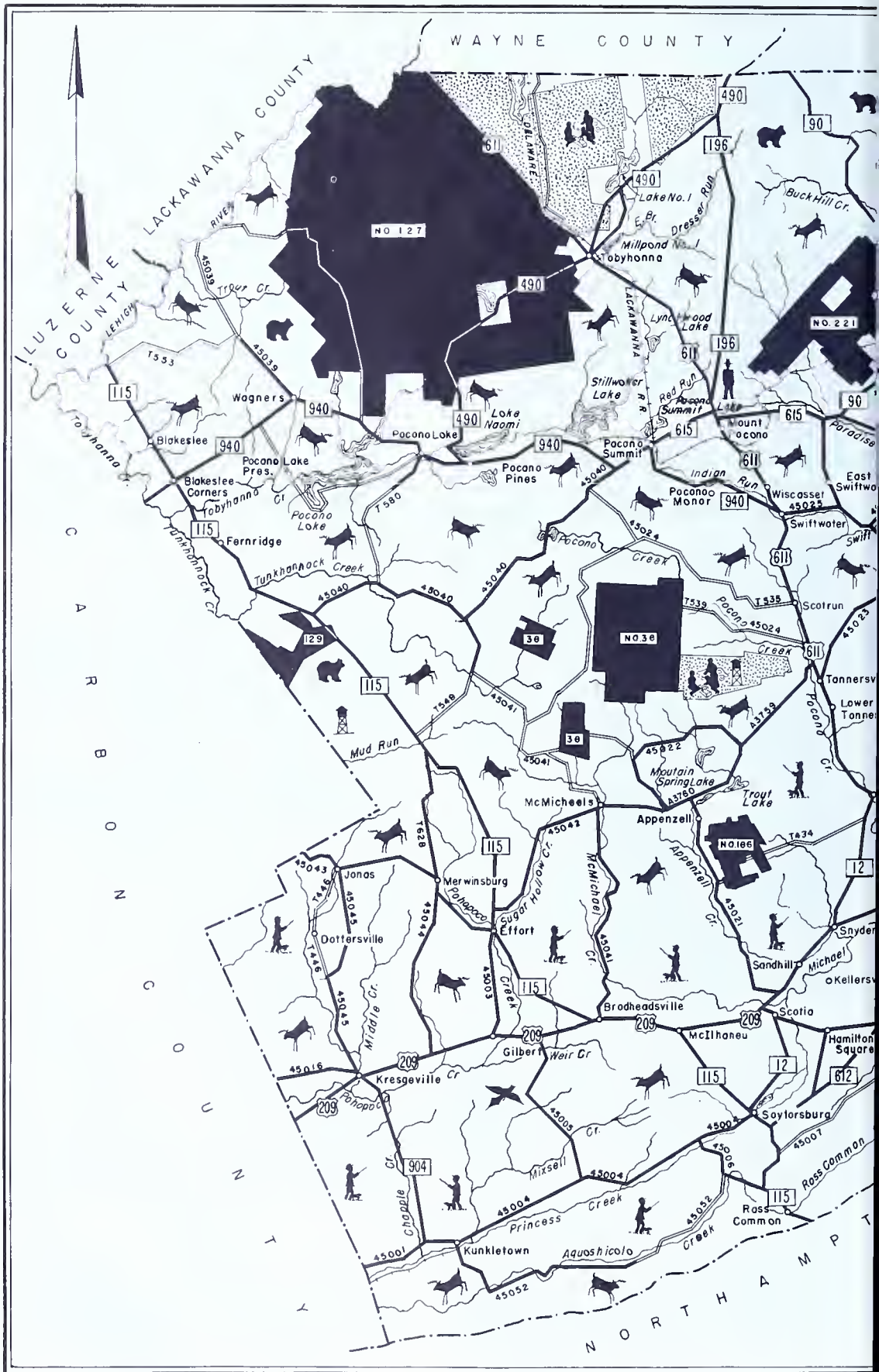
Industry

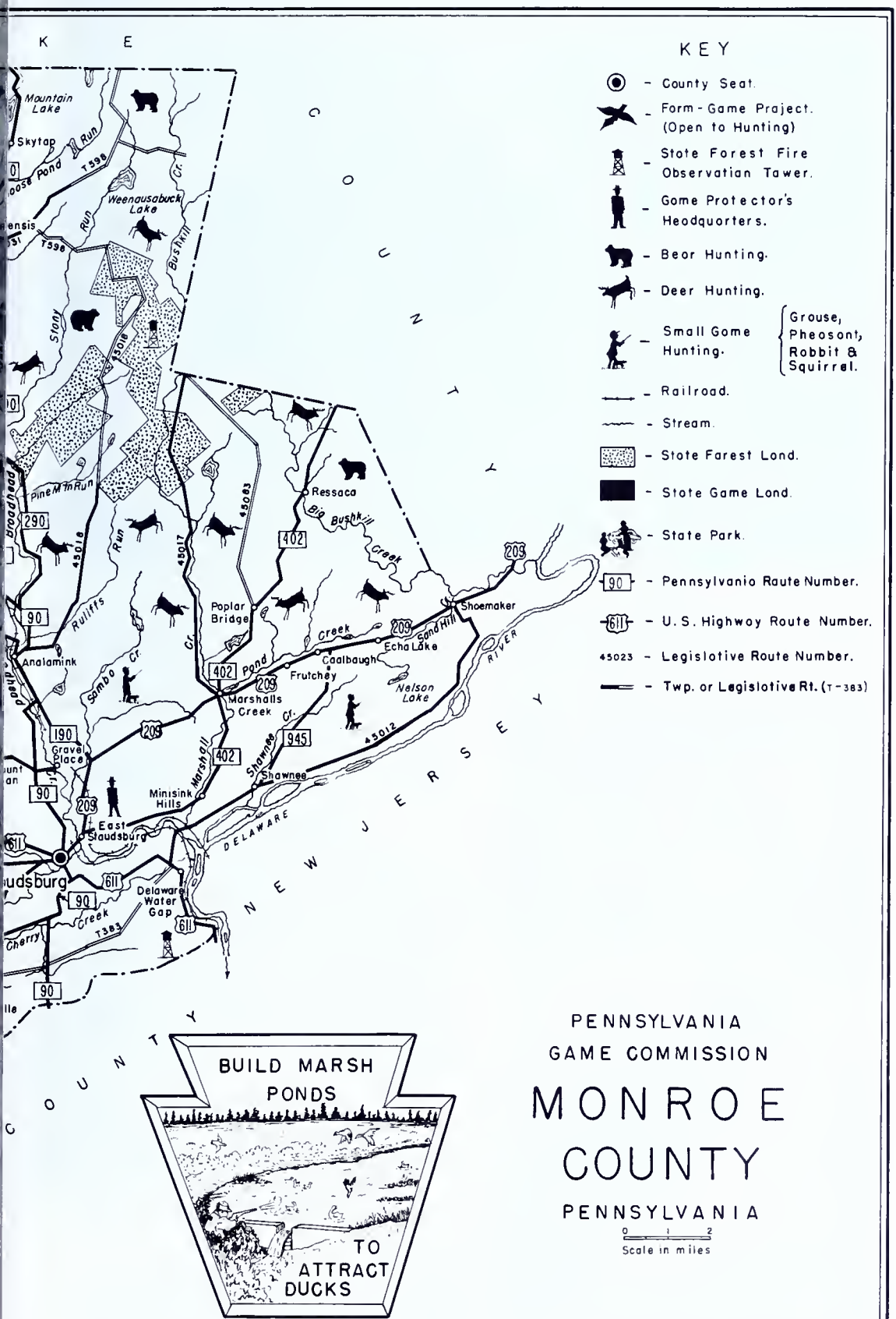
Manufacturing provides employment for many residents of Stroudsburg and East Stroudsburg. The mineral resources of the county include sandstone and limestone for building; crushed stone, sand and gravel, clay and shale for brick, and white clay. The principal classes of manufacturing industry are metals and metal products, textiles and textile products, paper and printing industries. The chief products are electrical machinery, apparatus and supplies; newspapers, periodicals and job printing, silk and rayon goods, hosiery, agricultural implements and machinery, stoves, heaters and ranges.

History

Monroe County was formed in 1836 from parts of Northampton and Pike counties and was named for the

(Continued on page 34)


WAYNE COUNTY
LACKAWANNA COUNTY
LUZERNE COUNTY
CARBON COUNTY
NORTHAMPT
DELAWARE
RIVER
LEHIGH
LACKAWANNA R.R.
NO 127
NO. 221
NO.36
NO.166
Lake No. 1
E. Br. Dresser Run
Millpond No. 1
Tobyhonna
Buck Hill Cr.
Trout Cr.
Lynnwood Lake
Stillwater Lake
Red Run
Pocono Summit Lake
Mount Pocono
Paradise
Wagners
Blakeslee
Pocono Lake
Pocono Lake Pres.
Blakeslee Corners
Tobyhanna Cr.
Pocono Lake
Lake Naomi
Pocono Pines
Pocono Summit
Indian Run
Pocono Manor
Wiscasset
East Swiftwo
Swiftwater
Fernridge
Tunkhannock Cr.
Tunkhannock Creek
Pocono Creek
Scotrun
Tannersv
Lower Tonne
Mud Run
Mountain Spring Lake
Trout Lake
McMichaels
Appenzell
Appenzell Cr.
Jonas
Merwinsburg
Pohopoco Cr.
Sugar Hollow Cr.
McMichael Cr.
Dottersville
Effort
Sandhill
Snyder
Michael
Kellersv
Middle Cr.
Brodheadsville
Scotia
McIlhaney
Hamilton Square
Gilbert
Weir Cr
Kresgeville
Pohopoco Cr.
Soyfersburg
Mixsell
Chapple Cr.
Princess Creek
Ross Common
Kunkletown
Aquashicola Creek
T553
T580
T589
T628
T539
T535
T434
T446
A3758
A3760
45039
45040
45041
45042
45043
45044
45045
45046
45021
45022
45023
45024
45052
115
940
490
611
196
90
209
904
129
30
12
612


K E
KEY
County Seat.
Form-Game Project. (Open to Hunting)
State Forest Fire Observation Tower.
Game Protector's Headquarters.
Bear Hunting.
Deer Hunting.
Small Game Hunting.
Grouse, Pheasant, Rabbit & Squirrel.
Railroad.
Stream.
State Forest Land.
State Game Land.
State Park.
90 - Pennsylvania Route Number.
611 - U. S. Highway Route Number.
45023 - Legislative Route Number.
Twp. or Legislative Rt. (T-383)
Mountain Lake
Skytop
Weenausabuck Lake
Ressaca
Big Bushkill Creek
Poplar Bridge
Shoemaker
Sand Hill Creek
Echo Lake
Coalbaugh
Frutchey
Marshalls Creek
Nelson Lake
Analamink
Rulifts Run
Sambo Cr.
Gravel Place
Minisink Hills
East Stroudsburg
Shawnee
Delaware Water Gap
Cherry Creek
DELAWARE RIVER
NEW JERSEY
COUNTY
BUILD MARSH PONDS
TO ATTRACT DUCKS
PENNSYLVANIA
GAME COMMISSION
MONROE
COUNTY
PENNSYLVANIA
0 1 2
Scale in miles
L.A. M. 1954

fifth president of the United States. Stroudsburg was first settled by Jacob Stroud in 1769 and was laid out as a town in 1806 by Daniel Stroud, his son, who planned wide avenues and kept the building lines 30 feet back of the sidewalks, giving the town a New England appearance.

The first settlers were Hollanders from the New Netherlands who established homes on the fertile lowlands called by the Indians "Minisink Flats." The first settler was probably Samuel DuPui who, coming from Esopus in 1725, built a cabin at present Shawnee.

The chain of frontier forts erected by the Province began at the Delaware River and four of them were located within the present county. The county was subject to many Indian raids until, during the Revolution, General John Sullivan marched through on his way to subdue the Six Nations.

East Stroudsburg, originally known as Brodhead Manor, was settled in 1737 by Daniel Brodhead. A State Teachers' College is located here.

The climate in the Pocono Mountains is healthful, Monroe County claiming its atmosphere is "99.9 percent perfect." The summer mean temperature is 64 degrees, an average of from 10 to 12 degrees cooler than any other point on the Atlantic seaboard.

Recreation—Fishing

Fishing waters (name of stream or lake, fish stocked by the Pennsylvania Fish Commission, location, and area or length of stocked waters) include: *Aquashicola Creek,* brook trout, Saylorsville, Rt. 115, 10 mi.; *Broadheads Creek,* brown and rainbow trout, Stroudsburg, Rt. 611, 6 mi.; *Broadheads Creek, Md. Br.,* brook trout, Canadensis, Rt. 290, 3 mi.; *Buckwa Creek,* brook trout, Kunkletown, Rt. 904, 8 mi.; *Big Bushkill Creek,* brown and rainbow trout, Recessaca, Rt. 402, 6 mi.; *Dotter Creek,* brook trout, Kresgeville, Rt. 209, 6 mi.; *Lake Creek,* brook trout, Saylorsburg, Rt. 115, 3 mi.; *Laurel Run,* brook trout, Stroudsburg, Rt. 611, 3 mi.; *Lehigh River,* brown and rainbow trout, Stoddartsville, Rt. 115, 3 mi.; *Middle Creek,* brook trout, Kresgeville, Rt. 209, 5 mi.; *Paradise Creek,* brown trout, Henry House, Rt. 90, 2 mi.; *Pensyl Creek,* brook trout, Snyderville, Rt. 209, 4 mi.; *Pocono Creek,* brook trout, Bartonville, Rt. 611, 7 mi.; *Pohopoco Creek,* brook trout, Kresgeville, Rt. 209, 11 mi.; *Princess Creek,* brook trout, Kunkletown, Rt. 904, 6 mi.; *Scott Run,* brook trout, Scott Run, Rt. 611, 3 mi.; *Snow Hill Dam,* rainbow trout, Canadensis, Rt. 290, 4 acres; *Tobyhanna Creek,* brown and rainbow trout, Tobyhanna, Rt. 611, 7 mi.; *Bradys Pond,* black bass, Pocono Lake, Rt. 940, 320 acres; *Delaware River,* black bass, Delaware Water Gap, Rt. 611, 15 mi.; *Mill Pond No. 1,* black bass, Tobyhanna, Rt. 611, 80 acres; *Naomi Lake,* black bass, Naomi Pines, Rt. 940, 251 acres; *Pocono Summit Lake,* black bass, Pocono Summit, Rt. 940, 94 acres.

Recreation—Hunting

Monroe County affords good hunting for forest game species, principally deer and bear. There is one Cooperative Farm-Game Project located in the county, Number 179, near Kunkletown, containing 21,001 acres. Five tracts of State Game Lands are open to public hunting: Number 127, in the northwest portion of the county, containing 21,509 acres; a part of Number 129, near Fernridge, containing 738 acres; Number 186, near Appenzell, containing 967 acres; Number 221, a new tract commonly called the "Devil's Hole" area, containing 3,781 acres located in Paradise Valley, a few miles from Route 290, and Number 38, in three parts, near Pocono Manor, containing 5,249 acres.



The Pennsylvania Cooperative Wildlife Research Unit

TRAINING AND RESEARCH

By Ward M. Sharp and Robert G. Wingard

IN last month's GAME NEWS, background information was presented on the organization, purpose, and functions of the Pennsylvania Cooperative Wildlife Research Unit. Now the accomplishments of the Unit—number of students trained and the nature of the research studies completed—will be discussed.

A summary of research projects was previously reported by Dr. Logan J. Bennett in the August 1942 issue of the GAME NEWS. During World War II the research and training activities were interrupted for the period 1942-45. Therefore, this article will review only those research projects conducted by the Unit since 1946. In order to present a complete report on training activities we have included information on all students graduated in the 17 year period, from the establishment of the Unit in 1938 to June 30, 1954.

Training

If we look back to 1938 when the Pennsylvania Unit was established, we can readily understand the necessity for training men in the new science of wildlife management. At that time there were only a handful of trained wildlife biologists or game technicians in the entire country. Congress had recently enacted legislation popularly known as the Pittman-Robertson Wildlife Restoration Act which made provisions for utilizing taxes on arms and ammunition to supplement state funds for wildlife management purposes. This legislation served to promote sound wildlife programs in the states and stimulated a need for technically trained wildlife workers. Today practically all states employ a staff of technicians for both management and research on wildlife problems.

Contributions which the Pennsylvania Unit made toward training wildlife management workers have extended throughout the United States and into Canada. This fact is best shown by the accompanying map showing the present location of graduates who are employed by state game agencies, by the Federal government or as teachers in other schools.

In the 17 year period there have

been 69 graduates of Penn State whose Master's degree theses were devoted to wildlife management problems. We have shown diagramatically where these men eventually found employment in their chosen field, and a tabulation is presented here to show the type of employment and relative number employed by the various agencies.

Type Employment and Location of Wildlife Management Graduates of The Pennsylvania State University March 15, 1938 to June 30, 1954.

Type of Employment	Number Employed	Percent of Total
State Game Agency		
Pennsylvania	7	10
Kentucky	4	6
Michigan	3	4
Delaware	2	3
Nebraska	2	3
Missouri	2	3
Maine	1	1.5
Maryland	1	1.5
Massachusetts	1	1.5
New Hampshire	1	1.5
North Carolina	1	1.5
South Carolina	1	1.5
Georgia	1	1.5
Saskatchewan, Canada	1	1.5
Total—State Game Agency	28	41
U. S. Government		
Fish and Wildlife Service	5	7.5
Forest Service	2	3
Navy Department	1	1.5
Total—U. S. Government	8	12
Teaching	13	19
Advanced Study in Wildlife	7	10
Armed Services	3	4
Private (not in wildlife work)	10	14
	69	100

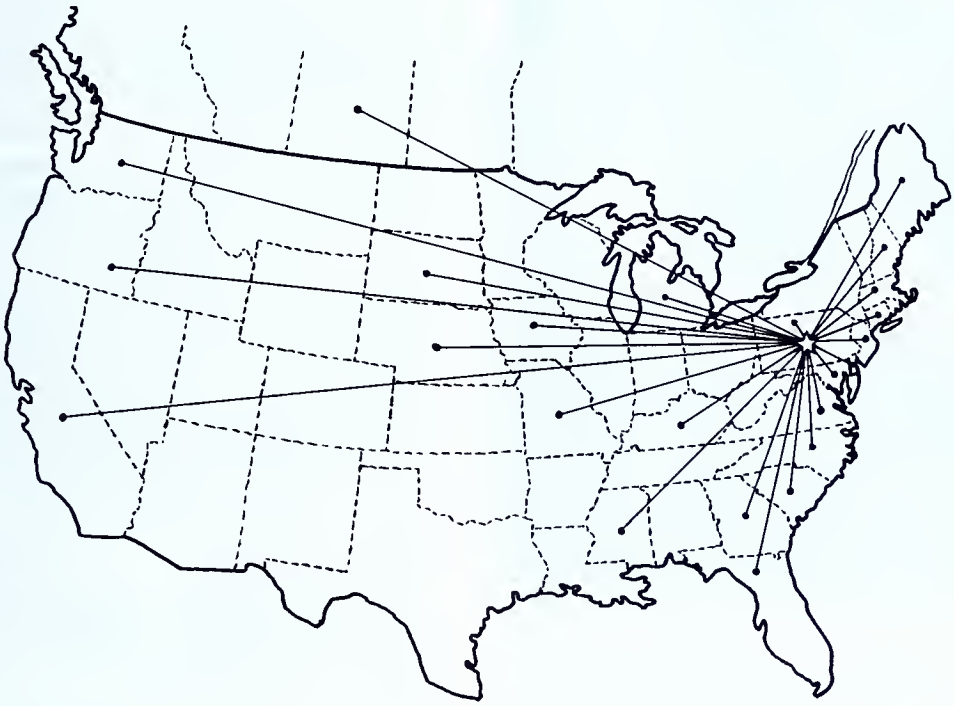
A number of these graduates have since continued their training and received Doctor of Philosophy degrees at other schools, but only one wildlife management doctorate has been granted at Penn State.

By far the largest single field of employment for trained wildlife management personnel has been the various state game agencies. About 41 per cent or 28 of the 69 graduates are currently employed by state game or conservation organizations. Factors responsible for this trend have been the financial impetus provided by the Pittman-Robertson program combined with the interest and, in a few instances, by public demand on the wildlife resources manage on the basis of the best available scientific information. Penn State wildlife management graduates are now employed by 13 state governments and by one Canadian Province.

These men hold positions as wildlife biologists, game managers, wildlife technicians and wildlife administrators. Their work involves investigations, research projects, or land and habitat management, and some are concerned with difficult administrative tasks. In this latter category trained wildlife men can perform an outstanding service by tactfully dealing with special interest groups who frequently oppose proper management of the public wildlife resource. Long tenure of some of these men and the fact that a number of states rather consistently, employ Penn State graduates indicate that these workers are doing a creditable job.

The United States Government has several agencies which require trained staffs to conduct technical work. Most important among those employing wildlife men are the Fish and Wildlife Service and the Forest Service. One Penn State wildlife graduate is currently employed as a Research Unit Leader, others are employed as Pittman-Robertson and River Basin Study administrators on the Federal level and some as forest managers on National Forests. The responsibility associated with these positions is evidence that these men are highly capable in their field.

Almost one-fifth (19 per cent) of



PRESENT LOCATION OF WILDLIFE MANAGEMENT GRADUATES OF THE PENNSYLVANIA STATE UNIVERSITY WORKING FOR STATE GAME AGENCIES, FEDERAL GOVERNMENT, OR IN TEACHING

the graduates are now engaged in the teaching profession. Not all of these are teaching wildlife management on the college level, but those in high school teaching have adequate training so that wildlife management is made a very stimulating and significant part of the usual biology and science courses.

Advanced study for further training has presented a challange to 10 per cent of the graduates, and they are now enrolled in other schools. Four per cent of the graduates are serving in the Armed Forces.

Private employment has been accepted by 14 per cent of the wildlife management graduates. None of these are directly associated with wildlife work. Specific explanation as to why these men are not employed in the field in which they were trained will not be attempted since many personal judgments undoubtedly entered into their decisions. Occasionally students find they are not adaptable or suitable for the work which frequently demands irregular hours and long periods spent in the field. A number of men have likely had economic reasons for their preference of positions. It is a known fact that salaries are seldom in alignment with the amount of training and responsibility assigned to the professional wildlifer.

Research

Before discussing the project work and accomplishments of the Unit it may be well to briefly review the procedure for selection of research problems. Approval of all projects conducted by the Unit is part of the administrative function of the Co-ordinating Committee. This three member group consists of the Unit Leader, the Assistant Unit Leader



Research studies conducted by the Unit have included work on wood duck nesting boxes. Here a student checks a box for utilization by these ducks.

and the Chief of the Wildlife Research Division of the Pennsylvania Game Commission. It is logical that the Game Commission be represented so that current problems can be assigned for work under an approved project; and by the same reasoning the results and conclusions are immediately available to the Commission for their consideration.

To assure an exchange of ideas and coordination of the nation-wide Unit work there is a biologist assigned by the Fish and Wildlife Service to supervise the Research Unit Program. Dr. Daniel L. Leedy serves in this capacity with headquarters in Washington, D. C. Annually, at the North American Wildlife Conference, personnel of all 17 Units attend meetings which serve to compare activities and to integrate the complete Unit program.

With this background of how research projects are planned, discussed and approved by the Coordinating Committee let us examine some of the research accomplishments of the Pennsylvania Unit.

Since the close of World War II, a variety of wildlife investigations have been conducted by the Unit at Penn State. These have dealt, chiefly, with game populations including studies of mortality, deer browsing, nutrition, land-use and survey of game kill by hunters. Certain life history studies needed to increase our store of knowledge and to inure better game management have been conducted. Important contributions have been made in the fields of fruit production in the native forest trees and shrubs, and in ecological analysis of game habitats. Following is a list of projects initiated since 1946:

Bobwhite Quail:
- Vitamin A Studies
- Antibiotic Studies

Cottontail Rabbit:
- Population Studies
- Mortality Studies
- Land-use Studies

Ecological Investigations:
- Effects of Release Cuttings on Tree Growth and Mast Yields
- Ecology of Abandoned Fields
- Fertilization Tests on Oaks and Beech
- Grouse Habitat Management
- Utilization of Mast by Rodents
- Mast Production Investigations

Furbearing Mammals:
- Studies of Stream Dwelling Muskrats

Gray Squirrel:
- Habitat Analysis
- Population Studies
- Nesting Box Studies

Mourning Dove:
- Population Studies

Reservoir Sites:
- Wildlife Surveys Prior to Flooding

Ring-necked Pheasant:
- Nest Mortality and Population Studies

Ruffed Grouse:

Population and Mortality Studies
Biochemical Studies
Food Habits Based on Dropping Analysis

Waterfowl:

Marsh Ecological Investigations
Wood Duck Studies

White-tailed Deer:

Damage to Conifer Plantations
Damage to Farm Crops
Damage to Forest Reproduction
Deer Browsing Preferences
Hunters Attitudes and Income From Hunters
Nutrition of Antler Growth

Wild Turkey:

Life History and Management
Experiments on Winter Feeding

Woodcock:

Population Studies

The broad scope of these projects is obvious. Space with not permit a statement of findings for each of these undertakings nor will it allow detailed acknowledgments to all those schools or departments that have cooperated with the Unit. However, the following have actively participated on research projects: Department of Zoology and Entomology; School of Forestry; Department of Rural Sociology and Agricultural Economics; Department of Animal Nutrition; Department of Poultry Husbandry; Department of Agriculture Biochemistry; and the Department of Veterinary Science.

Editor's Note: In the next, and final, installment of this story of the Pennsylvania Cooperative Wildlife Research Unit, more detail will be given on some of the Unit's important research studies. Students and leaders in this outstanding center of research have helped provide answers to such basic questions as: How serious is highway mortality to the cottontail rabbit population? What effect does diet have on antler development in deer? How far do squirrels range from their birthsites? Next month, these answers will be discussed for your benefit.



Fenced areas, compared to unfenced tracts, in forest habitat were used by Unit personnel to determine deer damage to forest reproduction.



Pennsylvania Farm-Game Program Largest in Country

Pennsylvania's Farm-Game Project Program has grown tremendously since its origin in 1936. It is now the largest of its kind in the country. Today the program is in effect in all parts of the State. It consists of 167 projects, encompassing 10,285 farms containing 1,040,144 acres. It is a cooperative arrangement between the landowner and the Game Commission whereby the farmer participant receives protection in the form of safety zone signs and deputy protection during hunting seasons, plus tree and shrub seedlings and technical advice on agricultural problems. Following are examples of accomplishments under the mutually satisfactory plan. In the two years ending June 1, 1954:

A total of 1,416 food strips containing 317 acres were purchased from cooperators. In many instances cooperators permitted much more grain than was bought to stand as winter feed for wildlife. They and many other Pennsylvania farmers have been very generous in providing winter foods for wildlife without remuneration.

In all, 388,787 linear feet of wildlife border, averaging 25 feet in width, were established on project farms. Again, both farmer and wildlife benefited. The farmer profited from the release of field edges, permitting the growth of better crops along field boundaries; wildlife gained through the creation of low-growing shrubby growths and vines that provide food and cover on many "clean" farms where protection is sorely needed in cold months.

Seedlings planted on cooperating farms by Commission personnel in the two years were: evergreens, nearly 73,000; multiflora rose, more than 410,000; and other species, almost 34,000—a commendable contribution to both soil and wildlife conservation by participating landowners. In addition, a total of almost 2,711,000 seedlings of the above types were distributed by the Game Commission and planted by the farmers themselves.

In the two-year period nearly 28,000 safety zones were established prior to the opening of the game seasons to provide protection to rural residents in Farm-Game Projects. The manner in which Pennsylvania hunters have learned to respect the safety zone provisions indicates they are grateful for privileges granted under the plan and are desirous of maintaining pleasant relations with their farmer benefactors.

Turkey Hunting in All Counties This Fall

In recent years certain Pennsylvania counties or other defined areas in which wild turkeys were not well established were declared closed to turkey hunting. At the 1954 July meeting of the Game Commission a state-wide season on the great birds was set for this fall.

Wild turkeys are abundant over much of the state now, and the supply for restocking is available to replenish other areas, if need be, where the forest or other conditions have not been as favorable as the main range.

1954 Waterfowl Seasons

Announced by Fish and Wildlife Service

The Game Commission has received official announcement from the U. S. Fish and Wildlife Service setting forth Pennsylvania's 1954 waterfowl seasons, within the state and on bordering waters. The federal authorities approved season dates recommended by the Commission.

The duck, goose and coot season is approximately the same length as last year. The brant season is 15 days longer than that of 1953. Fish and Wildlife reports indicate, on an overall basis, that waterfowl populations in the northern breeding grounds this year were slightly below those of '53, but still were above the average for the last five years.

The official seasons and bag limits declared by the federal agency, as adopted by the Pennsylvania Game Commission, follow. Opening and closing dates are inclusive.

Ducks: October 15-December 13. Bag limit: Daily, 4; in possession, 8, after first day. The daily bag limit may include one wood duck. Two may be in possession after the first day. One hooded merganser, daily or in possession, as part of the total bag. American and red-breasted mergansers also are to be included in the bag limits for other ducks this year.

Geese (except Snow Geese): October 15-December 13. Daily bag 2; possession limit 4, after first day.

Coots: October 15-December 13. Daily bag and possession limit 10.

Brant: October 15-November 13. Daily bag and possession limit 6.

Woodcock: October 1-November 9. Daily bag 4; in possession, 8, after first day.

Wilson's or Jacksnipe: October 1-15. Daily bag and possession limit 8.

There is no season this year on snow geese and swans.

Pennsylvania shooting hours for all waterfowl in 1954 are one-half hour before sunrise to sunset, with two exceptions. Shooting may not start until 12 noon on the opening day of the waterfowl season, October 15, or until 9 a. m. on the first day of small game season, October 30. Woodcock and jacksnipe hunting hours are the same as those for ducks and geese. No game hunting, migratory or otherwise, is allowed in Pennsylvania on Sunday.

On the Delaware River below Trenton Falls, the portion lying between Pennsylvania and New Jersey and on which the counties of Bucks, Philadelphia and Delaware border, the duck, goose and coot season will be the same—November 3-January 1—for hunters from Pennsylvania and New Jersey. The shooting hours will be those set for inland Pennsylvania, except the first day, November 3, when shooting starts at noon. The brant season in New Jersey and Pennsylvania is the same.

All shooting for ducks, geese and coots on the Pymatuning Reservoir, both in Pennsylvania and Ohio, will be the same during the 1954 season, October 15-December 13.

Waterfowl hunters in this state are required to own both a Pennsylvania hunting license and a migratory bird hunting stamp to hunt ducks, geese, coots and brant. The $2 federal stamp is obtainable at all post offices. It is not required in the hunting of sora, rails, gallinules, woodcock, Wilson's or jacksnipe, or doves.

1954 PENNSYLVANIA OPEN SEASONS FOR WATERFOWL AND OTHER MIGRATORY GAME BIRDS UNDER FEDERAL AND STATE REGULATIONS

SPECIES	OPEN SEASONS FIRST DAY	OPEN SEASONS LAST DAY	DAILY BAG LIMITS	MAXIMUM POSSESSION LIMITS*	LEGAL SHOOTING DAYS AND HOURS (SUNDAYS EXCEPTED) BOTH DATES INCL.	HOURS (EASTERN STANDARD TIME)
Sora	Sept. 1	Nov. 9	25	25	Sept. 1 to Nov. 9	½ hr. before sunrise to sunset
					Oct. 30 only	9:00 A.M. to sunset
Rails (except Sora) and Gallinules	Sept. 1	Nov. 9	15	30	Sept. 1 to Nov. 9	½ hr. before sunrise to sunset
					Oct. 30 only	9:00 A.M. to sunset
Woodcock	Oct. 1	Nov. 9	4	8	Oct. 1 to Nov. 9	½ hr. before sunrise to sunset
					Oct. 30 only	9:00 A.M. to sunset
NO FEDERAL STAMP REQUIRED TO HUNT SORA, RAILS, GALLINULES, WOODCOCK, JACKSNIPE AND DOVES.						
Wilson's or Jacksnipe	Oct. 1	Oct. 15	8	8	Oct. 1 to Oct. 15	½ hr. before sunrise to sunset
Doves	Sept. 15	Oct. 14	8	8	Sept. 15 to Oct. 14	½ hr. before sunrise to sunset
Ducks (including American and Red-breasted Mergansers)	Oct. 15	Dec. 13	4 (only 1 Wood Duck) (only 1 Hooded Merganser)	8 (only 2 Wood Ducks) (only 1 Hooded Merganser)	FEDERAL STAMP REQUIRED	Oct. 15 only 12:00 Noon to sunset Oct. 30 only 9:00 A.M. to sunset All other days of open season ½ hr. before sunrise to sunset
Geese (except Snow)	Oct. 15	Dec. 13	2**	4**	FEDERAL STAMP REQUIRED	The season for waterfowl (except Brant) and Coots on the Delaware River between Pennsylvania and New Jersey below Trenton Falls and the Counties of Bucks, Philadelphia and Delaware on the Pennsylvania side shall be from November 3 to January 1, incl. Shooting hours on opening day 12:00 o'clock Noon.
Coots	Oct. 15	Dec. 13	10	10	FEDERAL STAMP REQUIRED	
Brant	Oct. 15	Nov. 13	6	6	FEDERAL STAMP REQUIRED	
NO OPEN SEASON—SNOW GEESE, AND SWANS.						

* Possession 90 days after close of season where taken.

** Not more than 2 geese of any kind (except Snow Geese) in a straight or mixed bag a day, or 4 singly or in the aggregate in possession.

MIGRATORY BIRD HUNTING METHODS

Permitted: Bow and arrow, or shotgun not larger than 10-gauge, fired from shoulder (including hand-operated and semi-automatic repeating shotgun of not more than 3-shell capacity, which must be plugged to 3 shots so that plug cannot be removed without disassembling the gun); dog; blind; boat propelled by hand; floating device other than sinkbox; artificial waterfowl decoys. Injured or dead waterfowl may be picked up by means of a motorboat; sailboat or other craft. Shooting is permitted from a boat or other craft having a motor attached if such craft is fastened within or tied immediately alongside of any type of stationary hunting blind.

Prohibited: All rifles; live duck or goose decoys; automobile; aircraft; sinkbox (battery); power boat, sail boat, or any device towed by power boat or sailboat. Waterfowl, coot, gallinules and doves may not be taken under any circumstances by the aid of salt, or shelled or shucked or unshucked corn, wheat or other grains, or other feed or means of feeding similarly used to lure, attract, or entice such birds to, on, or over the area where hunters are attempting to take them. As used herein the terms "salt, or shelled or shucked or unshucked corn, wheat, or other grains," or "other feed or means of feeding similarly used," shall not be construed as including salt blocks, properly shocked corn, standing crops (including aquatics), flooded standing crops, flooded harvested crop lands, or, in connection with the hunting of waterfowl, coot and gallinules, grains found scattered solely as a result of normal agricultural practices, or, in connection with the hunting of doves, grains found scattered solely as a result of normal agricultural harvesting. Waterfowl may not be taken by means, aid or use of cattle, horses or mules and no motor-driven land, water or air conveyance or sailboat may be used to concentrate, drive, rally or stir up waterfowl or coots.

FEDERAL STAMP FOR MIGRATORY BIRD HUNTING

It is unlawful for a person over the age of 16 years to take migratory waterfowl unless he carries on his person an unexpired Federal migratory bird-hunting stamp, validated by his signature written in ink across its face. Not valid after June 30 following date of issue. This stamp is not required to hunt Sora, Rails, Gallinules, Woodcock, Wilson's or Jack-



Stealing Celery Stopped

MONTOUR COUNTY—Mrs. R. H. Smith, wife of the Treasurer of the North Montour Fish and Game Club and a Farm Game Cooperator on Project No. 91, located in Anthony Township, advises that last July she went to the vegetable garden to do a little hoeing. She had noted deer were eating the celery plants, but did not mind feeding them as she liked to see them on the farm. This particular evening while hoeing with her back to the woods she stopped and looked around and was amazed to see three deer within fifteen feet of the spot she was standing. How long the deer had been there prior to her discovery she did not know. Mrs. Smith was scared. She waved the hoe at the deer thinking they would scamper back to the woods. They moved away about ten feet and stopped again. She then made a hasty retreat to the house. The deer were still standing near the garden. She asked me if I had ever heard of deer chasing a person from a place where they had been eating for the past several evenings. Cub, her husband, has erected a cow bell in the garden which the Smiths now ring when the deer are in the garden. No more damage. Mrs. Smith now does her garden work in peace.—District Game Protector Bruce P. Yeager, Northumberland.

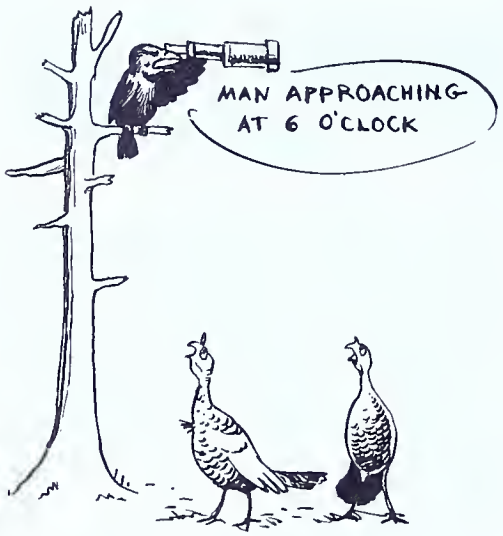


Donder, Blitzen, or Dasher?

CENTRE COUNTY—Willard Seele, a local Christmas tree grower, grower, related the following to me. He and a helper were trimming trees recently, when his helper called to him to look at the deer. Seeing deer. while trimming trees has been quite common to Mr. Steele. What surprised him and his helper was the nearness of this deer. It was standing about fifty feet from him when he first looked up. Using a bunch of grass to tempt the deer it came up and ate the grass from his hand, permitting him to pet the deer while eating the grass. He said it was a button buck and showed no fear. Since it is a remote area where Mr. Steele has his trees the possibility of it being a tame deer is remote.—District Game Protector Robert H. Spahr, Philipsburg.

Big Blacksnake Stomachs Game

UNION COUNTY—Each spring and summer brings reports of predaceous acts of blacksnakes; this one was no exception. Mr. Jage Lamey of near Glen Iron, reports opening a blacksnake containing four young grouse; Larue Stark, Forest Ranger near Forest Hill, killed one which had swallowed two half grown gray squirrels.—District Game Protector John Shuler, Lewisburg.



Sentinel Duty

WESTMORELAND COUNTY—On July 14, 1954, while patrolling in the vicinity of State Game Lands No. 42, Deputy McCoy and I spotted a flock of wild turkeys. I decided to sneak up on them to determine if there were any young around. I entered the woods about 600 yards away and cautiously made my way toward the flock. I felt certain that I could get close enough to see the young if there were any around. As I started over the last knoll that separated me and the flock, a crow started to caw and I could see turkey heads bobbing away from me. The old crow must have been the sentinel for I am certain that the turkeys never saw me.—District Game Protector Charles Hertz, Ligonier.

Conservation Camp Brings Trapping Success

DELAWARE COUNTY—One of the proudest boys I have ever seen was Billy Weichell, of Prospect Park, Pa. Billy had just returned from the Junior Conservation Camp at State College, and was trying out what he had learned at school about fox trapping, from members of the Pennsylvania Game Commission. When I came upon Billy he had just finished checking his trapline of two traps and was proudly displaying two gray foxes which he had caught. I believe that I can safely say that Billy is now a confirmed fox trapper.—District Game Protector Daniel S. McPeek, Jr., Glen Mills.

Bobwhite Has Hatching Success

CUMBERLAND COUNTY—Mr. Lynn Gilbert, R. D. 1, Newville, cooperator on Farm Game Project No. 153, Cumberland County, reports finding a bobwhite quail nest containing 16 eggs. A later check on the nest disclosed 15 of the 16 eggs had hatched.—District Game Protector George Bretz, Shippensburg.

Crab Catcher

LAWRENCE COUNTY—An Enon Valley fisherman, Ed Heath, reported to me recently that while picking soft shelled crabs from a Lawrence County stream one night, the following incident took place. While picking the crabs and sorting them, so as not to get the hard shelled ones, he happened to look toward the bank with his flashlight, and there stood a large raccoon watching the procedure. Having a hard shelled crab in his "pitching" hand he threw the crab at the curious raccoon with some force. To his amazement, Mr. Coon caught the crab in his forepaws and took off as quickly as he had made the catch.—District Game Protector Calvin A. Hooper, Jr., New Castle.





Shades of the Old West—Chuck

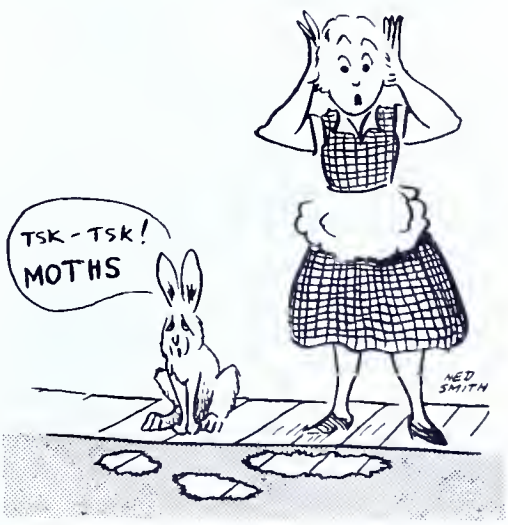
MONTGOMERY COUNTY—I received a report from Charles Smedley, Supt. of the Collegeville Trappe Joint Water Works here in Montgomery County, about an interesting story as follow: He and his workmen heard a lot of noise coming from a pasture close to the road. The men investigated and found a herd of cows fighting a large woodchuck. A cow would try to horn the hog and he would bite her in the nose. This would make the cow throw her head up flinging the groundhog high into the air. When it would land another cow would do the same thing. The cows had the hog pretty well bitten but most of the cows were bleeding from the nose wounds. The cows were still trying to trample the hog and the hog was still trying to bite the cows when the workmen stepped into the picture and stopped the fight. The workmen stated that it still took about a half hour for the cows to settle down from the excitement.—District Game Protector William E. Shaver, Mainland.

Grouse Seeks Driving Lesson

BRADFORD COUNTY — While driving through State Game Lands No. 219, I saw a grouse cross the road ahead of me with a brood of young. I turned off the car motor hoping to get a count before they scurried off into the brush. The car drifted down to the place where the grouse had crossed. I watched the grouse with her brood of six for about three minutes. She was rather excited and kept calling and carrying on. As I was watching her antics and listening to her calls I heard a noise on the rear window of my car. Looking back I saw one of the brood perched on the lower window molding. Apparently it had been left behind and it too became curious. The chick had perched itself on the rear window and kept peering in for about three minutes. Finally, it walked the length of the window molding and flew off into the rest of the brood. Instantly the old grouse quieted down and led her brood away.—District Game Protector Norbert J. Molski, Wyalusing.

Rug-Cutting Cottontails

LUZERNE COUNTY—The past month I thought I had about everything in the line of rabbit damage complaints until I received a call from White Haven saying rabbits were eating the rugs off a porch. Upon investigating I found the complaint to be true and surprised to



see holes about ten inches in diameter eaten in the rugs. I prescribed a formula to remedy this situation and all I can figure out is there must have been some solution in which these rugs were dipped and the rabbits took a fancy to it.—District Game Protector Norman J. Forche, Conyngham.

Which Is A Woodchuck?

LEHIGH COUNTY—Hunters are still having trouble distinguishing the different species of game. One woodchuck hunter, thinking he had bagged a groundhog, found to his surprise a dead raccoon. Another, believing that he was aiming at a groundhog moving through the grass fields, discovered he had shot a cat. A groundhog hunter told me of an odd experience he had. This hunter fired at a woodchuck, only to see it apparently standing up again. A second time he fired, and the same thing happened. Again the chuck dropped and then stood up. A third time the hunter fired, wondering what was wrong with the sights of his gun. This time no chuck stood up. When he went over to pick up the woodchuck, he discovered three dead chucks—a mother and two young ones lying on the ground.—District Game Protector William A. Moyer, Allentown.



Stinking Surprise

GREENE COUNTY—Skunks seem to have moved from the rural areas to the community of Carmichaels. I had numerous calls that skunk families have taken over garages and out buildings. This story was passed on to me by the local postmaster of Carmichaels. He was sitting on an easy chair one night on the lawn reading the local newspaper. He felt a tickling and scratching on his bare feet, but thinking it was one of his cats, didn't pay any attention to it. When it climbed on his lap and started to roll around, he thought it was time to look. He took off and so did the baby skunk!—District Game Protector A. J. Ziros, Carmichaels.

Rescued Fawns Bring Only Trouble

PERRY COUNTY—The same annual story. People picking up poor orphaned fawns, taking them into their homes and permitting their children to feed and care for them: then the Game Protector learns about it in a round about way and the mean man takes the fawn away from them—the result—a damned Game Protector, a deer that will furnish no hunter any sport and a saddened number of children and adults because of a false rumor that the Game Protector takes the fawns out and knocks them in the head. Most people that pick up these supposedly orphaned fawns do not believe that sooner or later these same dear little fawns become enraged beasts and a menace to everyone in their path. In future years everyone found holding fawn deer in captivity probably will pay the $100.00 penalty as a means to break up the practice.—District Game Protector Harold Russell, New Bloomfield.



OUTDOOR FUN WITH A FUTURE



Hunting Essentials— Safety and Courtesy

HOW do you feel when you hear about a hunting accident? Suppose you read in the paper about the two hunters who ran a rabbit into a culvert under a road. They lined themselves at opposite ends of the culvert and shot through it. They got the rabbit alright, but they also got each other, and spent the next several days picking shot out of their legs. Would you feel sorry for people who are so thoughtless? Would you laugh at such stupidity? Probably both.

But you should also feel a little sorry for yourself. Accidents such as that, which really happened, indirectly affect you and your hunting. Each year, more and more bills are introduced into state legislatures aimed at restricting the ownership and use of firearms for hunting. Each year too, land available for free hunting is reduced in area because of posting by land owners. Much of the reason for these restrictions is the carelessness, ignorance, thoughtlessness and disregard for private property by a few hunters. Because of them, all sportsmen are affected and there is a constant threat to the future of one of the oldest and most exciting of all sports.

Every time a hunting or shooting accident occurs, and every time a farmer finds broken fences, trampled crops or injured livestock caused by careless hunters, additional ammunition is provided for those who would "protect hunters against themselves." The best way to "spike the guns" of the attempt to restrict gun ownership and hunting is to eliminate shooting accidents; and to use only the best outdoor manners in the field, whether on public or private land.

It is estimated that ninety-nine percent of all gun accidents should never have happened. It has been said too, that the majority of accidents happen in the home, hunting cabin or close by, or happen because certain precautions were not taken before the hunter even left home.

Know Your Gun and Ammunition

Gun safety begins the minute you acquire a shotgun or rifle—whether you buy one, borrow one or are given one as a present. If the gun is a new one, made by a well known manufacturer, one problem is solved. But if you get a second hand or "used" gun, then be careful. If you know an experienced shooter, ask him to check it. If not, take it to a reliable gunsmith.

Make sure the gun is in good condition—that the barrel is clean and free from rust; that moving parts are



Illustration Courtesy Boy Scouts of America

Before you shoot, find out the correct ammunition for your gun. And when firearms are kept in the home, or anyplace where small children can reach them, place them in a locked gun cabinet or other container.

in working order and fit together correctly. Be sure that the trigger spring has not been tampered with so that the pull is "too light." Be sure the safety is in working order—and find out how it works. Have the sights checked to be sure they are true.

Find out too, the correct ammunition for your gun, and use only the ammunition for which the gun was designed. The wrong shell in your gun may cause a serious accident, not only to you, but a shooting companion.

Next, learn the names of the major parts of your gun. Whether shotgun or rifle, a gun has four major parts:

The *stock* serves as the handle with which you hold the gun to your shoulder, aim and fire.

The *barrel* is the tube through which the shot pellets or bullets are shot toward the target.

The *action* refers to the various moving and fixed parts of the loading and firing mechanism.

The *receiver* is the housing that unites these parts. The stock and barrel are usually bolted to it and parts of the action are contained in it.

You will want to know the names of the other parts of your gun, and some of the technical information about it. The best way to get this information is from the manufacturer's catalog and from the sporting goods shop salesman.

If you have a rifle, what caliber is it? What does caliber mean? How do you measure caliber? How does a .25 caliber differ from a .257? What kind of action does the gun have? Lever, slide, bolt, autoloading? What kind of sights?

If you have a shotgun, what guage is it? What does guage mean? What kind of action does the gun have? What sizes of shot are best for different kinds of game?

Next learn how to clean your gun and keep it oiled. If the gun needs repairs, take it to a good gunsmith. But keep it in good condition.

Before you ever go hunting, shoot your gun on a rifle range or trap

range. Shoot it often enough so that you become proficient and also so that handling it correctly is almost automatic. Once you have "sighted in" your rifle and can hit the bull's-eye with regularity, try to hit moving targets. Once you have "patterned" your shotgun, shoot at clay birds until you can score six or seven out of ten, and swinging the gun comes easily and smoothly. Know your gun, what sort of hunting it was designed for, and what it will do under various circumstances. Know the distance at which you can reasonably expect to kill game—whether bird or mammal, so you will be sure of clean kills and not cripples.

Gun Safety at Home

Every season you hear of experienced sportsmen who shoot themselves or companions, while cleaning their guns, or while showing them off. You frequently read of children who shoot themselves or friends while playing with dad's or brother's gun. There is no excuse at all for accidents such as these.

First of all, every gun should be treated as if it were loaded at all times, even though you are sure it isn't. Every time you pick up a gun, take one from a friend, or handle it in anyway, open the action and look to see if it is loaded. Then always point the gun muzzle in a safe direction. Do not ever let the muzzle point toward any person or animal. Insist that your friends do the same, and one cause of accidents will be eliminated.

Next, guns and ammunition should always be kept where children can not reach them. The best way is to keep them locked up. If this is not possible, remove the bolt, firing pin block or other firing mechanism, if possible, and keep it separate from the gun. From as early an age as possible, children should know that guns are potentially dangerous—and should respect them without being afraid of them.

Safety in the Field

The first two rules of safety in the field are the same as for safety anywhere else. Treat any gun as if it were loaded, and always point the muzzle in a safe direction.

Learn how to carry your gun in the field so that the muzzle points up or down—but always away from your companions. Four different gun carries are shown in the illustration. All are comfortable ways to carry a gun —and all are safe carries under most conditions. The important thing is to "watch the muzzle" and to have the gun under constant control.

Another excellent rule is to keep the finger out of the trigger guard, and keep the safety "on" until ready to shoot. The safety can be pushed "off" as the gun is swung to the shoulder, and at the same time you can finger the trigger.

If you put your gun down to rest a moment, or to have lunch, open the action first and unload the gun. Do not rely on the safety, even if it is "on". A safety is only a mechanical device and subject to failure (either mechanical or human). The best safety measure is to open the action.

When crossing stone walls or fences, windfalls or streams; when going through heavy brush or rough ground of any sort, open the action of the gun and remove the shell from the chamber. If alone, unload the gun place it over the fence or wall, then climb over yourself. If with a companion, hold his gun while he climbs over, then hand him both guns to hold while you climb over. But be sure the gun is unloaded and the action open.

When you put your gun in a car, or boat, unload it first and open the action. It's a good idea to place the gun in the case. The case will

protect the gun from injury, and it is also a good safety measure. In some places, laws prohibit carrying loaded guns in cars or boats—and loaded means shells in the magazine as well as in the chamber.

A few years ago, a hunter shot a rabbit and thought it was dead. He threw it on the floor in the back of his car, and put his gun on the back seat. He had driven scarcely a mile, when the rabbit recovered, kicked a couple of times and kicked the trigger of the shot gun. The pellets went through the back of the front seat and killed the hunter.

Be Sure of Your Target

This is a conservation rule as well as a safety rule. Always be sure of your target. Be sure before you aim that you want to kill what you aim at. In early morning, late afternoon —or even in deep woods at noon, light and shadows can be tricky. Another hunter stalking a deer may look like a deer himself under certain conditions. It's difficult under certain conditions to tell a buck from a doe. Be sure of your target before you shoot. Pass up a shot if there is the slightest chance of your being wrong.

In some places the law requires that you wear red clothes while hunting—or at least a red hat and jacket. This is based on the idea that the color stands out, that other hunters will recognize it as a man and not a game animal. It's a good idea to wear red even if it is not required by law. It certainly won't hurt any and it may save your life. As an added precaution take only khaki or red handkerchiefs with you. A white handkerchief through the brush may resemble a buck's "flag" a little too closely, and a careless hunter may snap off a shot in your direction.

Watch Your Zone of Fire

When hunting with companions it is especially important that you

Be sure of your target! Another hunter stalking a deer may look like a deer under certain conditions. If you are careful and alert, those conditions will never occur. Pass up a shot if there is even the slightest chance of your being wrong.

Illustration Courtesy Boy Scouts of America



know their whereabouts at all times and stick to your own zone of fire. A bird that flushes off sideways may provide an excellent shot, but if it means endangering a companion, pass up the shot. Don't shoot down a road or trail. There may be some one walking there, or sitting beside the road or trail enjoying a rest or a sandwich. Don't shoot across a highway or road. Some one may be passing by. Watch your background at all times. There may be a farm or cabin in the background. Each year too many people are killed or injured while out cutting wood in the back of their house—or while working around their farm. Livestock are frequently killed or injured by careless hunters who do not stop to consider what is back of their target.

Self Control

To be a safe hunter you must have self control—and be master of yourself and your gun. Self control comes with practice and experience in hunting. By handling a gun properly on every occasion, you build up the habits that are important when you are in the field. These habits are very important and should be acquired before you go hunting. Then in the thrill of a hunt, your reactions will be under control and you will not only be a safe shooter, but a successful hunter.

Outdoor Good Manners

Just as important to the future of good hunting in Pennsylvania is good outdoor manners. Most of the small game shooting is on private land—farms and woods owned by individuals. When you hunt on this land, you are the owner's guest just as if you visited him in his home. You have the responsibility and the obligation to treat his land as you would his home.

Ask permission before you enter his land. Ask him if you may hunt and where he would suggest you go. Find out where his livestock is so you will not shoot near it. If you are successful, offer him some of your bag. If you use his land frequently, take him a present occasionally—a few cigars, some candy for his wife or children or something else of that sort.

Always close all gates behind you. Straying cattle annoy farmers and spoil your welcome. Do not trample crops or walk across cultivated fields. You wouldn't want someone trampling your garden at home.

Shoot at a safe distance from all buildings, and do not shoot toward them. Be careful with fire. Do not build a fire without permission, and be sure it is dead out before you leave. Do not litter the ground or roadside with papers, candy wrappers or lunch left-overs. If you can carry them in, you can carry them out.

Signs and trail markers are not targets. There is no excuse for shooting at them. Usually they are so big that anyone can hit them, so it doesn't prove you're a good shot—just a thoughtless shooter.

The buildings, tables, benches and fireplaces in public campsites and picnic areas were built with public money—your money. They were put there for the use of all the people of the state. Use them, enjoy them but don't abuse them. Remember, you help pay for them.

Hunting is fun. More hunters go afield every year. The importance of safe hunting becomes greater each year. We can all help guarantee the future of our sport by eliminating accidents, and by using the best kind of outdoor manners. For only then will land be available for hunting and fewer restrictions in force. Will you help do your part?

NEXT MONTH . . .

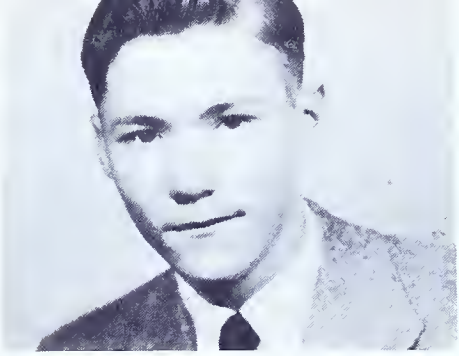
Watch for the Game Commission's report to YOU!

Farm Youth

YOU are looking at the young men who, under a competitive program, were judged the winners in last year's Wildlife Habitat Improvement Project for Future Farmers of America in Pennsylvania.

This recognition won for them cash prizes totalling $685—awards provided by the Pennsylvania Game Commission which sponsored the project under the supervision of the Department of Public Instruction.

Congratulations to the winners and to the more than 400 other boys who participated in this potentially great program. Under its modern day practices of conserving soil, managing woodlots, establishing farm ponds, planting food plots, etc., both the farm and wildlife benefits.



ROBERT L. RANSOM, *Conneautville*
First Prize—Statewide
First Prize—Northwest Division

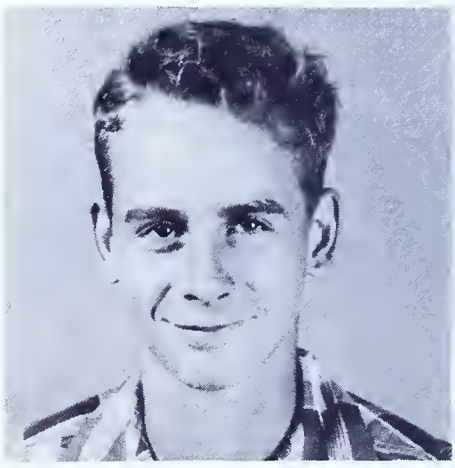


JAMES W. MAY, *Erie*
Second Prize—Northwest Division



BYRON SNYDER, *New Florence*
First Prize—Southwest Division

GLENN BEATTY, *Avonmore*
Second Prize—Southwest Division



TOM MCCOMBS, *Commodore*
Third Prize—Southwest Division

RICHARD LEHR, *Dover*
First Prize—Southwest Division





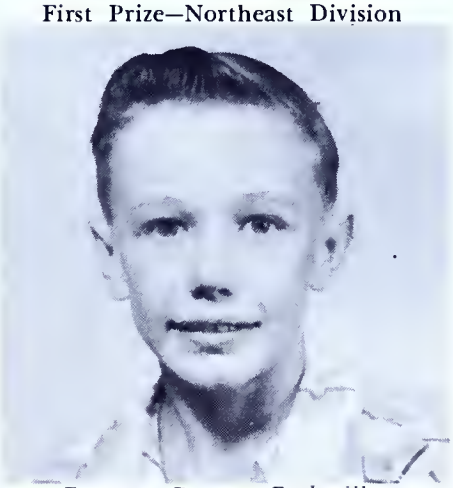
and Wildlife

It is hoped that 4,000, instead of 400, vocational agricultural students will enter the competition during the 1954-55 school term. It has been made more attractive, and a pamphlet describing its physical aspects, and the rules and regulations which govern the program, will be available for distribution to "Ag" teachers soon.

One of the new rules provides that no boy shall receive more than one reward. Last year and the year before the first and second prize winners at the Statewide level also were awarded prizes at the Division level. This year no Statewide winner will be eligible for Division level awards, a decision which we are certain will meet with the approval of everyone concerned.



STANLEY BEEMAN, *Dushore*
Second Prize—Statewide
First Prize—Northeast Division



RICHARD PLOTTS, *Forksville*
Second Prize—Northeast Division



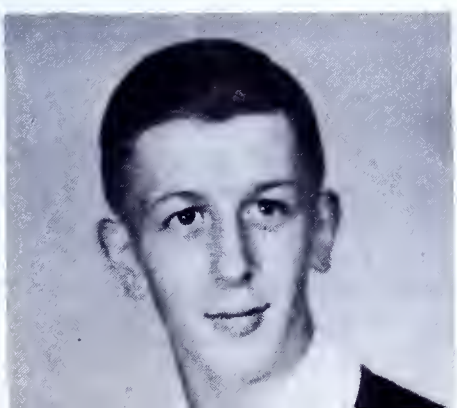
LEE KALTENBACH, *Wellsboro*
First Prize—Northcentral Division

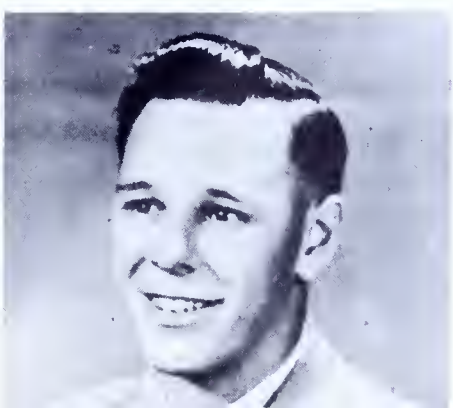
GARY HILEMAN, *Three Springs*
First Prize—Southcentral Division



CARL HELSS, *Forksville*
Third Prize—Northeast Division

DONALD BEDFORD, *Shunk*
Fourth Prize—Northeast Division





Shooting Form

Part III

By Tom Forbes



STANCE

A stance platform from which to shoot requires that the feet be spread comfortably apart and if choice is permitted the left foot is advanced and both feet are placed at right angles on an imaginary line from the bowman to the target. This positions the hunter so that his left side is toward the quarry. If the hunter is caught out of position and does not wish to take a chance of putting the quarry to flight by properly placing his feet in shooting position he can pivot his body at the waist to place the left side toward the target. The circumstances will govern the choice. However if the feet are firmly planted the second method is safer as the hunter must not take his eyes from his quarry and cannot select a place to step. A firm footing is preferable to stumbling at a critical moment or shooting with the weight unevenly balanced on the feet.

Assuming that we are on the practice range, we will take the orthodox position first described. Hold the bow in a horizontal position in the left hand by the grip with the bow string up, the hand and arm hanging naturally at the left side, and the bow string passing between the left arm and the body. If we are on the alert for game we will have an arrow nocked in the bow and held in position by the left forefinger. Stand erect, head up and shoulders back. In this position the bowman is facing ninety degrees from the target. Now turn the head and look along the left shoulder at the spot you want to hit. In drawing the bow do not shift the body weight from one foot to the other during any part of the act of shooting. To relieve the strain on the drawing fingers of his right arm the beginner naturally will incline his head forward to meet the bow string as he draws. Guard against this fault as we shall later explain that the position of the head is important in governing the length of the draw and in aiming.

NOCKING THE ARROW

Raise the bow arm and bring the bow to a horizontal position in front of you about waist high, knuckles of the left hand and arrow plate of the bow up and the bow string bearing against your left hip at a point on the bow string approximately opposite the middle of the lower limb of the bow.

Draw an arrow from the quiver with the thumb and fore finger of the right hand. Lay the arrow across the bow at the arrow plate and revolve the shaft until the cock feather (the one at right angles to the arrow nock is up and perpendicular to the bow string. Shove the arrow forward until the arrow nock is between the bow string and the bow and then draw the arrow toward the string until the bow string enters the arrow nock at the nocking point on the string. Continue this backward movement of the arrow until the bow string is placed under tension by the arrow. Hold the arrow in this position with the left forefinger pushing the arrow shaft against the arrow plate. The right hand can now be released and the arrow will remain in position fully nocked. If we now drop the left hand which is holding the

bow until the arm hangs naturally at the left side the bow can be carried fully loaded and ready to shoot. This is normally the procedure practiced by most bow hunters when stalking or still hunting game. The position is not tiring and the hunter is relaxed yet ready to draw and shoot when game is sighted.

DRAWING

Precautionary measures to protect his bow are first taken by the archer. Generally speaking a bow should never be overdrawn. While some manufacturers of modern bows claim that no damage will result from overdraw it is a wise archer who limits the length of draw to the length of arrow for which his particular bow is designed. At full draw a bow is under almost maximum strain. To overdraw may rupture or strain the fibres and permanently weaken the bow or it may break. To prevent the possibility of overdraw an arrow is always nocked to measure the length of draw. Flex the bow by small increments and increase the length gradually until full draw is reached. This is the position at which the point of the arrow of a proper length for your bow is drawn even with the back of the bow at the arrow plate.

If the bow is held in a vertical position during the preliminary flexing the bowman may find that the arrow moves away from the bow and falls off the arrow rest or rises vertically above the rest when the draw is under way. In the first instance the trouble is avoided by the way the drawing fingers apply initial pressure to the bow string. Make contact with the bow string, with the three drawing fingers touching the string at the first joints, and as pressure is applied in the act of drawing, permit the string to revolve along the first joints of the fingers until the actual drawing point on the finger tips is reached. The friction between the bow string and the inside of the arrow nock will



Photo by the Author

The hunting aim—the hand is drawn to the cheek and the bow is canted to bring the shaft of the arrow directly below the right eye. Posed by Bob Kendig of the Lebanon Archery Club, a former Pennsylvania Field Champion.

force the arrow shaft against the arrow plate and hold it in position. In the second instance the arrow point rises because pressure is not applied evenly by the drawing fingers and in a direct line with the arrow. The effect is often mistakenly said to arise from pinching the arrow nock between the first and second fingers of the drawing hand.

The bow is drawn with the first three fingers of the right hand. The thumb is permitted to remain in its normal position when the hand is relaxed and takes no part in the draw.

With the palm of the right hand up and the fingers fully extended, place the forefinger under the bow string to the right of the arrow nock. The middle and ring fingers fall into position under the bow string to the left of the nock. The bow string should cut across the three fingers equally about three fourths of the distance from the finger tips to the first joints. Draw

the string back carefully a few inches allowing the string to revolve and bunch the flesh near the finger tips and let these fingers take over the work which has been performed by the forefinger of the left hand in holding the arrow under tension against the bow string.

To make the draw, swing the bow to a position where the upper limb of the bow corresponds to the hour hand of the clock at 1:30 with the grip about shoulder high. The bow should rest in the V formed by the thumb and fingers of the extended left hand with the fingers curled lightly around the grip and the bow held in place by the tension applied in the draw. The base of the thumb should not exert any pressure against the bow although the tendency is to cock the wrist and permit the heel of the hand to do the work.

Extend the left arm toward the target with the arm in a relaxed position to permit the under part of the elbow to remain down and away from the string which otherwise on release would strike the inner arm just below the elbow.

Now with the fingers, hand, and forearm relaxed draw back steadily using the shoulder muscles to do the work. The hand and forearm act only as a connection between the bow string and the shoulder muscles.

At the same time tilt the head to the right until the right eye is directly above the arrow as the right hand is drawn to the cheek at or about the corner of the mouth. This draw and the method of anchoring and aiming which will be discussed in a future article is called by various names among which are hunter's draw, cheek draw, high anchor, etc. Its sole purpose is to reduce the vertical angle which the arrow makes with the line of sight. Canting the bow to the right from the vertical has further reduced this angle in addition to aligning the arrow shaft directly below the right eye of the bowman.

An attempt to draw at eye level to cancel out the angle between the arrow and the line of vision to permit the bowman to sight directly along the shaft places the drawing arm in a position where a straight pull with the strong shoulder muscles is impossible, and any attempt to anchor so close to the eye will distort the vision. Drawing to the height of the eye without anchoring at a given point, would result, in addition to loss of drawing power, in variations in the length of draw and consequently changes in the velocity with which the arrow is propelled from the bow. Under such conditions no accuracy could be expected.

Tri-County Archers warm up prior to a 28 target Hunters Round at the Steeltown Gun Club in Lebanon County.



Chokes, Patterns and Range

By Ed Shearer

THE choice of choke is somewhat tied up with barrel length. Generally speaking, the more open the bore the shorter the barrels while the tighter the choke, the longer they should be. There is sound reason for this theory. The experienced wing shot who picks the open bores with their wide patterns and short barrels, is the grouse, quail or woodcock hunter, who has thick cover to contend with. This means fast accurate shooting with a fast swinging gun. This is the true gun pointer who has developed lightning fast reflexes.

This type shooter can use his open boring in the longer range field shooting (such as ringnecks) with success, because of his speed in getting on the bird and the shot away.

The same type shooter who picks the tighter borings is the open field, trap or duck shot, who tends more on the aiming side. The perfect example of this type is the chap who acts as a gun in retriever field trails on released game. He must let the birds get far out sometimes so the dogs can show their wares to the judges and he cannot miss. The killing pattern of a full choke 12 gauge at 40 yards is about 36 inches. On a bad flying bird at 40 yards if the hold is 15 inches off center, it's better than an even bet he will have a running cripple. If he is 20 inches off center with the same pattern he will miss or worse, hit a bird which keeps right on going. This gunner picks the long barrel with its long sighting plane for accurate holding and a close pattern at long range.

But the beginner, being neither of these two types of experts, wants to know which is the best choke for me? There are two schools of thought on this. Some authorities hold the choice should be a full or modified choke with at least a 28 inch barrel. The idea being that it forces the beginner to be more exact in his alignment before he gets the shot away. Thus he is working right from the start to learn hitting his game with the center of his pattern instead of scratching it down with the fringe of his pattern. Although this is learning the hard way there is no doubt of its soundness. Also I doubt that in open field shooting, the beginner is too much handicapped by a full choke, unless he fires blindly. At the start his reflexes will be slow and he will lose more time in aiming. Consequently his game will be getting out to where his pattern is opening up to reasonable degree.

The other cult holds to the theory that the tight borings are too discouraging to the beginner. They say the wider the pattern the better chance the beginner has. There is no doubt of the truth of this.

Both of these points of view have advantages and disadvantages. The writer learned under the full choke school in the old days when the cover was considerably thicker than it is today. I well recall that first season nearly half a century ago, when a hundred flushed grouse would be an average day. That season taught me that the "poke and pull" method produced mainly noise.

The great danger for the beginner if he starts out depending on the





PGC Photo by Bob Parlaman

Gun clinics and safety first programs are an important part of any sportsmen's club activities. Here a group of sportsmen examine firearms and ask questions of an arms manufacturer's representative who are always willing to help with such programs.

fringe, is that he will always be a sloppy holder, which a good shot never is. Also he had better buy himself a GOOD dog for a big percentage of his hits will be cripples. If you are going to hunt quail, grouse or woodcock in thick cover you have no choice other than improved cylinder. But for more open upland shooting stick to the tighter borings. It takes a gunner of some experience to use an open bore and get a high percentage of clean kills.

This brings us to a consideration of patterns. As the pattern controls the range at which any given size game can be consistently killed, it is well to understand the two factors that control it. The density or hitting power is mostly controlled by the choke. The killing power or penetration is controlled by the size of the shot.

Contrary to popular belief the 12-16 and 20 gauge patterns are approximately the same diameter with barrels of "comparative choke constriction." If one ounce of chilled shot were loaded in 2¾ inch cases and fired at nearly identical velocities out of each gauge with barrels of comparable choke at the same range it would be hard to tell them apart as far as diameter goes. But here is the joker. With approximately the same diameter pattern at any given range, the high velocity 3-1⅛-6 load of the 16 gauge will show a 10 percent decrease in comparison with the 3¾-1¼-6 load of the 12 gauge in pattern density. The high velocity 2¾-1-6 load of the 20 gauge will show a 20 percent decrease as compared with the 12 gauge in pattern density. Thus it should be clear that though their pattern diameter are approximately the same their density is not and density chiefly controlls the killing range.

I recently ran across some pattern data on the pattern spread of all standard degrees of choke constriction. This was compiled by the Imperial Chemical Industries Ltd. of England, and has never been made available by our own laboratories. It states, "The diameter in inches covered by the bulk of the shot charge of a shotgun at various ranges for all gauges." This I believe would

mean 90 to 95 percent of the total number of pellets in the shot charge.

Range (Yards)	Pattern Diameter (Inches)			
	True Cylinder	Imp. Cylinder	Modified	Full
10	19	15	12	9
15	26	20	16	12
20	32	26	20	16
25	38	32	26	21
30	44	38	32	26
35	51	44	38	32
40	57	51	46	40

Now bear in mind these pattern diameter figures include the fringe which is an uncertain killing quantity. Now to get down to the milk in the coconut, it has long been accepted that the sure killing range of any given shotgun and load is determined by the percentage of the shot charge that is contained in a 30 inch circle. In short when the density of the pattern has thinned out to where it will no longer insure 3-5 hits on the game you are seeking, then that is the maximum sure killing range for that gun and load. So let us take a look at the pattern percentages within the 30 inch circle, at game shooting ranges of 30-60 yards at 5 yard intervals, made available by the Imperial Chemical Industries Ltd. This will give us a true picture of what we can expect in the matter of sure killing power. Tests were conducted with 1 1/16 ounce of shot sizes corresponding to our 5s, 6s, 7s, and 7½, running 172, 223, 299, and 345 pellets to the ounce, with a 12 gauge shotgun. Results were as follows.

Range (Yards)	% Shot Concentration in 30 in. Circle			
	True Cylinder	Imp. Cylinder	Modified	Full
30	60	72	83	100
35	49	61	71	84
40	40	50	60	70
45	33	42	50	59
50	28	33	40	49
55	21	27	32	40
60	17	22	32	32

As another hunting season opens—one that promises to have many more hunters afield—some thought should be given to the probable maximum range of ordinary size shot. This is important from a safety standpoint where there may be a number of hunters in adjoining fields. In a treatise called Smokeless Powder, by Mr. Walter Coxe, of Du Pont is stated the following. "When the gun is raised as high as 40 degrees above horizontal, a shot charge of No. 6 will cover an area from 400 to 900 feet long, the nearest striking at a distance of approximately 400 feet from the shooter. With No. 4 shot the distance will be slightly greater, with the nearest pellet striking not less that 600 feet from the muzzle of the gun.

Another note in the interest of safety is the use of modern smokeless loads in shotguns with lamminated, twist, Damascus and certain low carbon steel barrels of the black powder days. Modern smokeless powders require much higher pressures to burn them. These pressures are much higher than these barrels were designed to withstand. Their use, sooner or later results in a blown-up gun with more or less serious injury to the shooter.



Beagles for Bunnies

By Dave Fisher

THE Beagle hound is the most popular dog in among American sportsmen today. The American Kennel Club registered 45,398 in 1953 to top all breeds. Of course these are all pure-bred, pedigreed and registered hounds and this number does not take into account the many thousands of dogs that are not pure-bred and therefore not registered or eligible. This trend will probably lead many into becoming breeders believing that they can make a fortune overnight and in many cases this could lead beagles to the fate of the Cocker Spaniel, Airedale, German Shepherd, Irish Setter and other popular breeds of their day—especially so where no other knowledge of breeding is had except boy plus girl equals puppies. Such breeders with each generation will be producing dumber and inferior hounds, so in buying a beagle today you are better off buying from an old timer.

Any hunter that has owned a beagle can tell you he is really a versatile little hound. Although their principal use in this country has been for hunting of rabbits, both snowshoes and cottontails, some owners have trained them for use on Ringnecks, Grouse and Fox—but their principal use even today is for rabbits.

The American bred beagle has all the true hound characteristics. Their colors run all shades; lemon and white; red; tri-color (black, tan, white); black and white; open marked and black blanketed. They will run in height from 9 to fifteen inches and weight will range from 18 to 30 pounds.



The sportsman buying a beagle for hunting should locate a breeder that has straight hunting and field trial stock. It is nice to buy from local breeders where you can visit the kennel and see the dogs perform and then make your decision to buy the one you like. Buying from breeders away from home is reasonably safe if you are careful in selecting one who advertises in a magazine where the advertisers are guaranteed by the publisher (such as *The Beagle Journal*). If you live in the northern part of the country and purchase a dog from a breeder in the south, you will find that it will take that hound from four to six weeks to become acclimated to the different type running and scenting conditions and I do not advise purchasing a dog from the south during our colder months. All in all a little common sense must be used by both buyer and seller.

As to the size hound you should buy, that is up to your individual preference. Hounds in the 15″ class (13″ to 15″ measured at the shoulder) are best for running both cottontail and hare. Some like them because of their faster more spectular driving ability. However, those who go in for field trials and hunting both seem to prefer the smaller 13″ class hound (measuring 13″ and under). If hunting with a pack of three or more it is not advisable to mix the smaller hounds with the larger ones, for if you do, the larger dogs will outfoot the smaller ones.

As to sex in selecting a beagle, as far as hunting qualities are concerned

there is little difference. There are good and bad found in both males and females. Here again it is a matter of personal preference. As for myself, I would take a female any day in preference to a male. I have found that they are easier to train and handle and outside of the problem of watching and caring for them when in season they mind their business more and are cleaner to have around.

In previous issues we have given some articles on training, but again I want to say don't rush your hound. If you start taking a young dog out at 6 months and he doesn't get going until he is a year old or more, don't worry about it. I like hounds that start when they are around 9 to 15 months of age—for as a rule they keep running until old age takes them away. Hounds from natural hunting and field trial strains have the instinct right in them for trailing and many of them start off on the line if they strike a hot trail. The main thing is getting them to stick to it and the best way to do that is not to sit on a fence and let them run, when you are starting them, but to follow them as closely as you can and encourage them. I also believe that all hounds should be taught to respond to either a whistle or a horn.

One little warning if you are starting out breaking a young hound to the gun—we will assume that he is running fairly well and you are out hunting with him (or her)—take it easy and *be sure you kill that first bunny* they circle back to you. Then let it lay until they come up to it and smell or even maul it a bit.

Valuable Information in Leaflet with Hunting License

Every person who buys a Pennsylvania hunting license should receive a leaflet titled Digest of Hunting and Trapping Regulations. The leaflet is prepared for the information and guidance of people who take wildlife in Pennsylvania through the use of gun, bow or trap.

The folder is a ready reference to questions that commonly concern sportsmen. It should be carefully read and carried with the hunting license for reference when the most-asked questions about hunting or trapping arise. The leaflet does not, of course, set forth all statutory provisions of the Game Law. Consulting the folder and the hunting license itself, or asking information of a game protector, may prevent a fine or embarrassment, game authorities advise.

New Beagler Magazine Aims For Better Sport

The Beagle Journal, a new magazine designed for that great fraternity who follow America's most popular dog, made its first appearance with the April, 1954 issue. The publication, which is slated to appear monthly, has both editorial and advertising offices in Towanda, Pa., and is presently edited by Mort Norton, of Clinton, New York. Aims of the new periodical are to provide a "meeting grounds on paper" for beaglers everywhere, a source of practical, up-to-date information on every phase of beagling, to promote conservation and wildlife conservation, to cooperate with beagle clubs and organizations to foster the sport. A liberal editorial policy is designed to present club news, field trial dates, personalities in the field, beagle health, care and breeding, field trial reports in a new and better way, kennel plans and kinks, training information, plus any other information of interest to both novice and professional beaglers. Subscription rates have been set at $3.00 per year.

Try Other Fox Sets

By Larry J. Kopp

DURING the past decade so much has been said about the dirt or bait hole set for fox that many equally good fox sets have been almost forgotten.

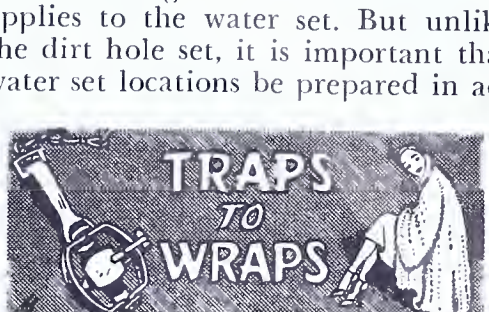
It is true, of course, that the dirt hole set is the most effective, and certainly one which every beginning trapper should master completely. At the same time however, there are some other good sets which should be tried. This is particularly true when you consider that foxes have a way of losing interest in something which always looks the same; that is foxes who have come close to being caught in such a set will recognize it wherever it may appear, and will often avoid it as a result.

The solution would be to make a variety of fox sets.

Perhaps one of our oldest fox sets known is the water set; also called the stepping stone set. This set was used successfully long before anyone ever heard about the dirt hole set, and it is still good today.

As its original name implies, the set is made in or near water. It can be made along streams; at a lake or dam; or even at a pond of sluggish water in a swamp. Obviously, it goes without saying that sets should be made in areas which foxes frequent.

The same care which one observes when making the dirt hole set also applies to the water set. But unlike the dirt hole set, it is important that water set locations be prepared in advance so that passing foxes will become used to seeing them.



To make the set, select a spot where it will not be hemmed in by brush or weeds. The better policy is for the trapper to wear rubber boots and stand in the water while working so that no footprints are left. A large rock is then placed in the water approximately twenty-four inches in from the edge of the stream. This rock must be large enough so that the top of it will not be under water. If no large enough rock can be found handily, place two rocks on top of each other. Another rock having a flat or slightly bowl like surface is then placed between this one and the bank; or possibly slightly closer to the bank. Here it is important that at least one inch of water flows over the top so that the trap, when set, will be completely covered by water. A good idea is to cover this second rock with a thick layer of mud and leaves; or if it would not look out of place, a rock covered with a thick layer of moss is good. The idea is to have a good bed for the trap since it is important that the trap sets firmly. Naturally the rock must not be too large, but just large enough to accommodate a No. 2 trap.

When setting the trap, bait and lure is first placed upon the rock farthest from the bank and slightly covered with mud and watersoaked leaves. Next the trap is set upon the flat rock between this one and the bank of the stream, making certain that it sets firmly and is covered completely by water. This requires some very precise handling for it's important that the trap is not set so deep in water that no covering would remain on the trap. In other words, the



PGC Photo by Don Miller

Game Protector Ralph L. Shank, Pine Grove, demonstrates trapping techniques to Boy Scouts at Camp Nisatin, Schuylkill County, during a camporee last spring.

trap should be set so that the pan is just barely covered by water. When the trap has been set firmly, it is then covered with several large leaves. After these are placed upon the trap, they in turn are covered with thick mud or moss. Although it is not absolutely necessary, it is a good idea to wear rubber gloves while doing this.

It is also possible to use the same trap pan covers with water sets as you use for dirt hole sets, but you may lose many trap covers since they are carried away or buried in the water. At some places it would perhaps be suitable to use layers of moss taken from rocks for trap covers, but it must be remembered that if no other rocks in the immediate vicinity are covered with moss, it would look conspicuous.

In other words since there is no absolutely specific way to cover traps at water sets, the trapper uses whatever material happens to be present at the location, and covers the trap in whatever manner seems most suitable. Some trappers use only mud; others use only soggy leaves; and still others use both as described.

To anchor the trap, one can either us a long chain with a grapple attached to it; or if possible, stakes can be used. This is one of those things which depends upon the set location. Sometimes it is possible to use stakes, but at other times it is not. At some places for instance rocks prevent one from staking the trap solidly, so the best thing would be to use grapples instead. Whichever method is used it is important to remember that chains and grapples or partly exposed stakes must also be covered well.

This set is just a bit more difficult to make than the dirt hole set, but once the trapper learns to make it properly by experimenting, it is a good one to know.

COMING . . .

The Pennsylvania Game Commission's biennial report to you! A special section next month devoted to giving you the facts and figures on Pennsylvania's wildlife program.

IN THE NOVEMBER GAME NEWS



A gift that's sure to hit the mark with all your hunting friends, 12 big issues of GAME NEWS . . . everyone packed with helpful hunting data . . . worthwhile information on wildlife . . . and facts from your Game Commission. Take care of your Christmas list now. Mail gift subscriptions with a check or money order to GAME NEWS, Pennsylvania Game Commission, Harrisburg, Penna.

Name .....

Address .....

City ..... **State** .....

1 year $1 **3 years $2.50**

Name .....

Address .....

City ..... **State** .....

1 year $1 **3 years $2.50**

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrock, Supervisor, 937 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

Pennsylvania Official 1954 Open Seasons and Bag Limits

(Regulations apply for Hunting License Year, September 1, 1954-August 31, 1955)

Open season includes first and last dates listed, **Sundays excepted**, for game. **The opening hour for small game and other wild birds or animals on October 30 will be 9:00 A. M.** Otherwise, shooting hours daily are from 7:00 A. M. to 5:00 P. M., but from July 1 to September 30 inclusive, 6:00 A. M. to 7:30 P. M. (All shooting hours based on Eastern Standard Time.)

	BAG LIMITS		OPEN SEASONS	
UPLAND GAME (Small game possession limits below)	**Day**	**Season**	**First Day**	**Last Day**
Ruffed Grouse	2	8	Oct. 30	Nov. 27
Bobwhite Quail	4	12	Oct. 30	Nov. 27
Wild Turkeys	1	1	Oct. 30	Nov. 27
Ringneck Pheasants, males only	2	8	Oct. 30	Nov. 27
Rabbits, Cottontail	4	20	Oct. 30	Nov. 27
Squirrels, Gray, Black & Fox **(combined)**	5	20	Oct. 30	Nov. 27
Squirrels, Red **(closed October 1 to 29 incl.)**	Unlimited		All mos. (except Oct. 1-29)	
Hares (Snowshoe Rabbits)	2	6	Jan. 1	Jan. 8, 1955
Raccoons	Unlimited		Unprotected	
Woodchucks (Groundhogs)	Unlimited		Unprotected	
Grackles	Unlimited		Unprotected	
Bears, over one year old, by individual	1	1	Nov. 15	Nov. 27
Bears, as above, by hunting party of three or more	2	2	Nov. 15	Nov. 27
DEER: **Bow and Arrow Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal (requires hunting license and Special Archery License) by individual	1	1	Oct. 11	Oct. 23
DEER: **Regular Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal: by individual	1	1	Nov. 29	Dec. 11

NO OPEN SEASON—Hungarian Partridges, Hen Pheasants, Sharp-tailed Grouse, Cub Bears, Elk, Spike Bucks with antlers less than three inches long, Antlerless Deer, and Otters.

FURBEARERS:				
Skunks and Opossums	Unlimited		Unprotected	
Minks	Unlimited		Nov. 5	Jan. 1, 1955
Muskrats (traps only)	Unlimited		Dec. 1	Feb. 1, 1955
Beavers (traps only) state-wide	4	4	Feb. 14	Mar. 5, 1955

SPECIAL REGULATIONS

POSSESSION AND TRANSPORTATION LIMITS of legally-killed small game shall mean not more than the daily limit for the first day nor more than an accumulated total for each succeeding day of the open season for each species; but not in excess of the season limit, regardless of where held, stored or found in possession.

DEER—Even though there are two separate seasons for taking deer, a hunter may not kill more than one deer during the two combined 1954 seasons, whether hunting individually or with a camp or hunting party. A Special Archery License is required during Bow and Arrow Season, issued only by the Pennsylvania Department of Revenue, Harrisburg, at a fee of $2.00.

BEAVERS—No trapping at Commission-posted dams. **Nonresidents may not trap beavers. One person may set, tend or operate 10 traps only.** Traps must not be set on the structure of any beaver dam or house, or within 25 feet of the waterline on the structure of either thereof. Tags must be kept above ice or waterline to facilitate identification without disturbing traps. **Pelts must be tagged within 10 days after season,** and may not be sold or otherwise disposed of until properly tagged. Present them to the Game Protector in District or County where trapped.

TRAPPING—Traps for furbearers not to be placed, staked or set before 7:00 A. M. on the first day of the open seasons. The season indicated for Trapping closes at 12:00 o'clock Noon on last day. Traps must be tagged with metal name tags.

SNARES—The use of snares is prohibited in all counties except by special permit.

PENNSYLVANIA

Game News

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

NOVEMBER 1954 BIENNIAL REPORT 10 CENTS



P38.34



THE STORY BEHIND THE COVER

AS ANY wild turkey hunter can plainly see, the old gobbler on this month's cover is just being true to his breed. No one have ever given I.Q. tests to Pennsylvania's many species of game birds but anyone who has ever hunted the wild turkey will undoubtedly testify none is smarter than the bronzed beauty of the autumn uplands.

Hunting the "gobbling ghosts" of Pennsylvania's wooded hills is a real challenge. Wild turkeys have exceptionally keen eyesight, can run like a deer, and have a surprisingly fast take-off and flight speed for so big a bird. Their comeback to the Keystone State has been one of the great conservation success stories of all time. Interest in outwitting them during open hunting seasons of recent years has almost over-shadowed the annual excitement shown in pursuit of deer, bear, ringneck and rabbit. Last year, for example, field officers of the Game Commission's southeast division found, much to their amazement, a noticeable drop in the numbers of small game hunters scouring the corn patches and alfalfa fields on opening day. It turned out turkey hunting was the answer. Most of the missing had just headed for the tall timber, turkey caller in hand and visions of a nice, plump Thanksgiving dinner raising their blood pressure.

Today, most hunters would gladly trade chances on a score of ringnecks, rabbits or squirrels for just one crack at a big gobbler. You'll find them this month anxiously guarding the ridge-tops all over Pennsylvania. They might look like petrified statues but closer inspection should indicate severe symptoms of hunting fever.

The real turkey hunter, sitting so quietly and still—his back propped up against a big log or tree trunk, his rifle or shotgun lying securely across his lap—is actually a study in alertness. That is, if he is to get a shot at a turkey. His eyes are constantly on the move, trying to see everything, everywhere. Every ten minutes or so, his hands work the cedar box and piece of slate as though his life depended on it.

A thorough knowledge of wild turkey habits is almost essential to success. And considerable ability at talking turkey language helps tremendously. From the time a flock of these big birds leaves its roost in early morning, far down some mist shrouded valley, until it reaches the ridge tops in late afternoon the turkey hunter must be on his toes. One sour note on the call, one sudden movement of the body, or one loud cough or sneeze is usually all it takes to send the birds somewhere else. If a wild turkey sees or hears you before you see or hear it, there will be no chance for a shot. But when that big bronzed bird stands there within gun range—its head up, chirping inquisitively, scratching nervously in the leaves . . . Man! It's worth all the wait and more.

By the way, that big tom turkey on the cover did get away. He's waiting for you this month, somewhere in Pennsylvania!

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Tom L. McDowell .....Bradford

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 11
November, 1954

CONTENTS

Don't Be Just A Hunter 5
By Keith C. Schuyler

Black Bruin—Droll Master of Comedy 10
By Wilbert N. Savage

Setting Our Sights 17
By N. R. Casillo

Deer Damage to Farm Crops .. 22
By J. K. Pasto and D. W. Thomas

The Pennsylvania Cooperative Wildlife Research Unit—Research Studies 29
By W. M. Sharp and R. B. Wingard

A Sportsman's Map of Somerset County 31

Field Notes 37

Nuts to Wildlife 41
By W. M. Sharp and J. W. Malcolm

The Pennsylvania Game Commission's Biennial Report ... 69

★

Cover Painting
By
Ned Smith

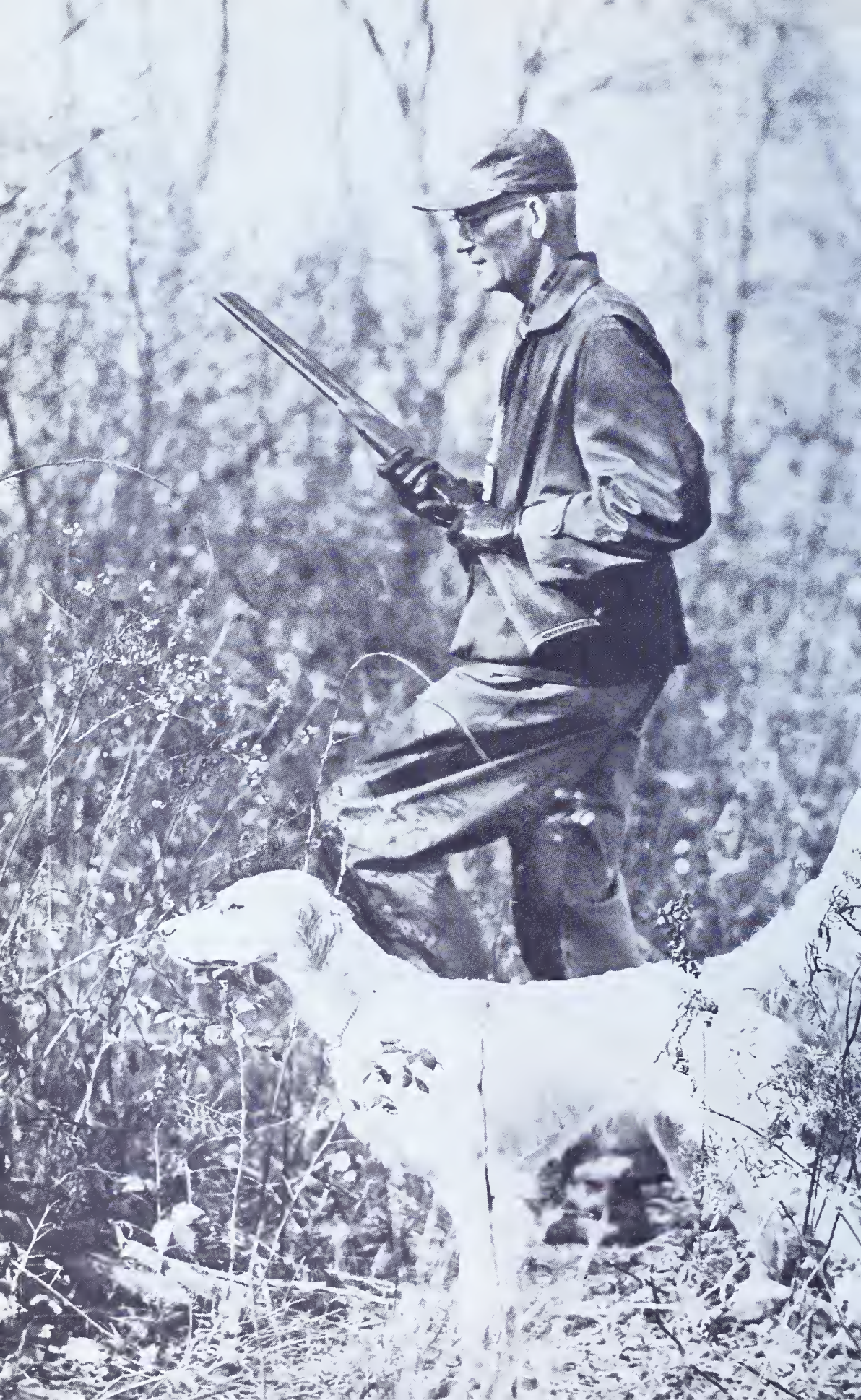
PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



Editorial . . .

Those Good Old Days?

WITH this issue the Pennsylvania Game Commission makes its biennial report to the Governor of the Commonwealth and to the people of Pennsylvania. It tells the story of a two year period in a fifty-odd year program of research, management, law enforcement and education. Between the lines can be read another story of hard work by a comparatively few people with courageous ideals who are devoting their lives to conservation's cause.

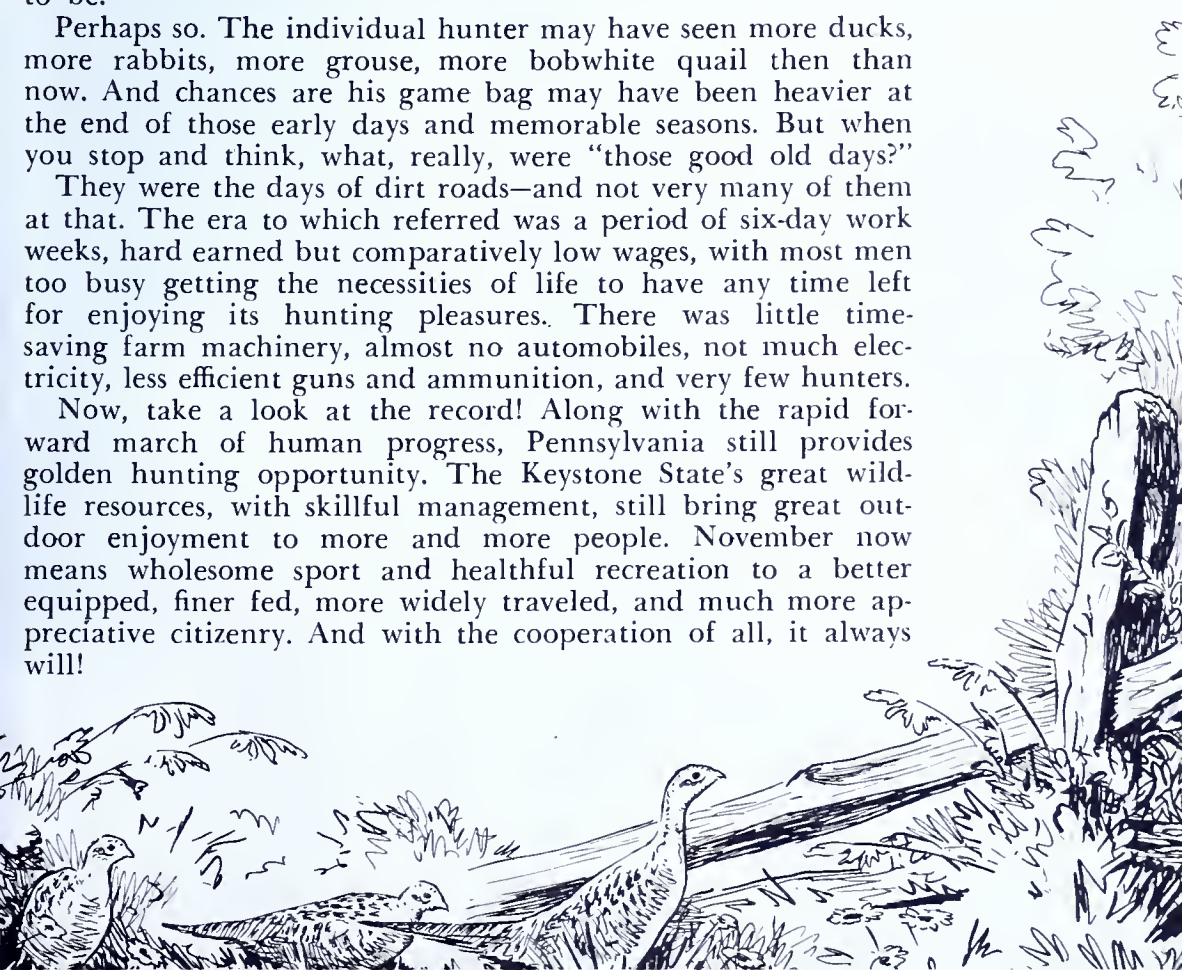
Yet the great accomplishments of these two eventful years will not be universally acclaimed. There are some who will not appreciate the efforts made in their behalf, others who will refuse to face the facts, and finally, a few who will vociferously compare the record with "those good old days."

To each individual, stalking the fields, forests and stream-sides this month, hunting becomes a personal thing, to be measured by memories of bygone hunts. The success of each open season this year quickly, and perhaps subconsciously, is related to the trips afield of yesteryear. Those whose hunting experience spans several score years and more will probably recall hunts that seem far better than any these Novembers bring. They will be quick to say, "Hunting now is not nearly as good as it used to be."

Perhaps so. The individual hunter may have seen more ducks, more rabbits, more grouse, more bobwhite quail then than now. And chances are his game bag may have been heavier at the end of those early days and memorable seasons. But when you stop and think, what, really, were "those good old days?"

They were the days of dirt roads—and not very many of them at that. The era to which referred was a period of six-day work weeks, hard earned but comparatively low wages, with most men too busy getting the necessities of life to have any time left for enjoying its hunting pleasures. There was little time-saving farm machinery, almost no automobiles, not much electricity, less efficient guns and ammunition, and very few hunters.

Now, take a look at the record! Along with the rapid forward march of human progress, Pennsylvania still provides golden hunting opportunity. The Keystone State's great wildlife resources, with skillful management, still bring great outdoor enjoyment to more and more people. November now means wholesome sport and healthful recreation to a better equipped, finer fed, more widely traveled, and much more appreciative citizenry. And with the cooperation of all, it always will!





Don't Be Just a Hunter

By Keith C. Schuyler
Illustrated by Ray Yokum

SO, YOU want to go a-hunting? But you don't know anything about it! Well, brother, don't feel too badly. The woods will be full of fellows in the same boat . . . I mean boots. The only difference between you and them is that you had the brains to ask what it's all about before joining the pack.

But, you're on the right track when you start asking questions. No, I don't know all the answers. However, I've hunted enough with the good and the bad to know the type of fellow I like to go hunting with. He just didn't happen to be born that way either. Maybe there was a time when he did things that he'd be ashamed to admit today, or perhaps he was lucky and grew up with a fine bunch of fellows who got started right.

You'd be surprised, though, to know how few really stick to a strict code. You see, a lot of the oldtimers started out hunting when there were no daily or season limits . . . and not much need for them. They didn't like to waste shells, couldn't afford to, and their chief concern was to put meat on the table. Fortunately, many of them adjusted their hunting code to the times, and there are no finer sports around than some of these old duffers who have difficulty seeing down the barrel anymore.

Unfortunately, though there is a group of veteran hunters who never could see too well. They couldn't see the need for shorter seasons, for smaller bag limits, for a code of sportsmanship, for a Game Commission. Some of these short-sighted individuals taught a lot of the fellows you will have to associate with in the woods.

No, all hunters aren't sportsmen. That word is used much too loosely.

You say you still want to go hunting? But you want to be a sportsman. Well, glad you said that. Otherwise I wouldn't want to waste my time talking to you. We have enough plain hunters.

No, eighteen isn't too young. Age doesn't mean a darned thing if you get started off on the right foot. You know the old saying, "You can't teach an old dog new tricks." Of course, we both know that doesn't always hold true, but don't let age worry you. The same rules apply to everybody.

Sorry, but I'd rather not get into what gun you should use. That twelve-gauge double may be just what you need. But, before you go out after game, practice throwing it to your shoulder ten times for every practice shell you shoot. Unless you can see straight down the barrel to that little bead sight every time you bring it up, better look around for something that fits you. Because, if you are seeing too much barrel, you'll be shooting high. If you can't find the bead, you'll be shooting low.

Try to become the best marksman you can. You'll get a lot more satisfaction from your shooting and have fewer cripples on your conscience.

You say you've been shooting some clay birds and tin cans with pretty good results? Well, that's fine. Because birds and rabbits are often much easier to hit. We miss 'em because we are caught off guard or get too excited. No, I'm not kidding. That's the truth.

This business of getting excited is important. Sure, excitement is half the sport of hunting. But we don't

want to get so excited that we forget the rules and go off half-cocked.

Did you ever stop to think just what that expression really means, "Going off half-cocked?"

Just what it says. You know the type of fellow who is always getting into hot water because he is only half prepared. Well, the fellow who goes out hunting without any knowledge is no better prepared than the fellow who gets so excited that he lets the hammer on his gun slip when he only has it half-cocked. Both are potentially mighty dangerous individuals.

The first time you go out, you will probably be going with some friends. You want them to still be your friends when you return. What's more, you will want them to be live friends.

The importance of safety can't be over-emphasized. Every hunting arm is made for one purpose . . . to kill. Although it isn't designed to kill human beings, it most certainly can. And, will. Unless you keep the muzzle always pointed away from other humans as well as yourself.

A couple years ago I hunted with a fellow who was one of the most careless I've ever seen. Three times I cautioned him about pointing his gun at me. Never again! He just laughed and said the gun was on safe.

No gun is ever on safe. And, every gun is always loaded. I'm serious. Treat all your guns always as though they are loaded and cocked, and you'll never be sorry. When you aim, aim to shoot.

Yes, accidents will happen. I remember one day when I was about your age and six of us were walking along a stone fence to get past some deep snow drifts. We had been hunting crows, and I was last in line with my Dad's old double-barrelled hammer gun. And, it was on safe.

But, remember, I said no gun is ever safe.

Suddenly I slipped on one of the snow-covered stones and fell heavily on the fence row. One of the big hammers struck against a rock, and a load of No. 4's blasted out the barrel!

No, no one was hurt. I had been carrying the gun with the barrels pointed straight out the side. When I fell, I hung onto the gun and pulled it to me so that I could still control the direction of the barrels.

Dad had given me a lot of good advice when he gave me that gun.

Yeah, you're right, it's too bad that every dad isn't able to give his boys the right kind of advice before they start out hunting. But, some of them have never hunted themselves and others simply won't take the time.

But, to get back to this safety angle, there are a couple things you will want to watch when you do go hunting.

Nobody likes things to come too easy. And hunters are sometimes tempted to take almost impossible shots just for the satisfaction that comes with making that "one in a hundred." Too often they endanger other hunters or merely cripple their quarry. You should never shoot at a living target unless you have a reasonable chance of scoring a clean kill. Further, you should never shoot unless you know what is *behind* your game.

Now you might see some of the fellows you hunt with do some of these things I've been cautioning you not to do. But, don't let that get you off the right track. Lots of people drive too fast with a car, too . . . cemeteries are full of them.

Being new at the game, you have a wonderful chance to set a good example for the other fellows. Of course you don't want to be too obvious about it or start pointing out the other fellow's mistakes. That will class you as a show-off. If you get the chance to compliment one of



Photo by Keith Schuyler

It's never too soon for firearms safety training. The man who takes the time to teach a boy how to shoot, and how to shoot safely, is making a sound investment in the future of the sport.

them on something he does that is especially sporting or that shows he is an extra safe hunter, though, you can make a friend and encourage him to keep his good habits.

We humans are funny creatures.

For instance, you don't mind my talking to you this way; you asked for it. But, if I tried to tell these same things to some of my friends who have been hunting for years, they'd resent it. Call me a preacher. And, I suppose I'd feel the same way. We prefer compliments to criticism.

Hunters are the same way about their dogs. They might cuss them out proper for some minor mistake, but you don't want to open your yap even if the mutt does everything wrong. If the dog is working well, that's another story. Any compliment you can make about the dog will be music to its master's ears.

Don't attempt to direct the dog under any circumstances. You will probably only confuse the animal and irritate its owner. He likes to feel that he has a one-man dog. Petting the pup may make you a friend of the dog for a few hours and an enemy of the fellow who cares for it the other 364 days of the year. Don't even offer the dog part of your lunch unless you first ask if it's okeh.

Above all, give the dog a chance. If it is working a bird, don't try to get in ahead of the dog. Or, if it happens to be a hound on a rabbit, don't rush here and there trying to get into position for the shot. Pick a stand and take your chances from there on the circle. If the dog is a retriever, let him bring the bird in unless it becames necessary for you to go hunt it yourself.

Now, who gets the shot when game is flushed?

Well, generally speaking it belongs to the man who jumped it. As you are moving along abreast, there is an imaginary line that divides your shooting range as just half way to the fellow next to you until after the first shot is fired. Then, if the game is still moving and you have a good shot, fire away.

Never hesitate to shoot game that someone else has crippled if there is reason to think that it might escape. Then hand it over to the man who shot it first and explain why you shot. I don't mean that you should give up a bird that was merely feathered or a rabbit that just had

a little fur knocked loose. But a bird that has been started down or a bunny that has tumbled is obviously badly hurt and should go to the gun that did the initial damage.

If the game goes out between you, as often happens, and you both shoot together, don't be one of these "I got it" boys. You'd feel awfully silly if, when you got it home, you found that the shot all struck it from the other side. Give the other fellow the benefit of any doubt, and you will find that he will likely return the courtesy the next time.

Give the game a break. If you happen to see a bird or a rabbit in the nest, call the fellow next to you over to cover your shot. Then, bounce it. If your companion hasn't had as much shooting as you have, offer him the shot.

Sometimes it works out that one man gets all the shooting. It might be you. When you get home, make a sincere offer to share your kill. None of this, "Would you like to have a couple of those rabbits?" Hand him half the game. "Here, take these. You can shoot a couple for me the next time."

If he flatly refuses, don't make an issue of it. Personally, I never accept a share of small game that I haven't killed. But I have no objections to sharing with someone else . . . especially if it happens to be a fellow who doesn't get the chance to hunt as often as I do.

There is one other item of common courtesy when you get home that too many hunters neglect. And, that is an offer to share car expenses if the trip is at all lengthy.

It isn't important if you are traveling with a friend who often rides with you, but it sometimes happens that we have hunting companions with whom we have little association during the rest of the year. Seldom will your offer be accepted; but, it should be made. In fact, if you have any reason to think that it might be welcome, insist on it.

Do these things I've been telling you apply to the big-game hunting season, too? They most certainly do.

Of course there are some rules which apply differently, and there are few places any more where dogs are used on large game animals. But this business of safety is possibly even

The novice, if he (or she) is to be a successful and safe hunter, must first know the gun—how to shoot. The place to learn is on a range, under the supervision of a competent instructor.



more important. Because, the gun you use can shoot a lot further and a lot harder.

In the first place, you should be sure that you are entirely familiar with the gun and have shot it enough to know what it can do. If it isn't hitting where it should and you don't know how to sight it in, get somebody to help you.

Carry a compass and know how to use it. You can ruin a trip for an entire gang of hunters by becoming lost. You should have a supply of matches at all times in the event that you are forced to spend a night on the mountain. Don't fire away your cartridges trying to get help during daylight hours. Wait until it becomes dark, then touch one off about every half hour to give the searchers a chance to find you. Light a fire and stay put. Wandering around in the dark will increase your chances of being hurt and make the job of a searching party doubly tough.

Remember, even an experienced hunter can become lost. But, only the foolish stay lost for long.

Listen carefully to instructions if you are hunting with a gang . . . then follow them. In fact, the less you have to say, the better your chances are of scoring a kill. It will also increase your chances of being asked to hunt with that gang again.

Don't embarrass your party by making an illegal kill. But, if you make an *honest mistake,* drag it in for the game protector. It will not be a black mark against your record if your story is plausible.

How are you going to remember all this?

Well, most of it is just plain common sense and common courtesy. Usually, your conscience will give you the right answer. But, if you are ever in doubt, don't hesitate to ask one of the more experienced hunters. Because, no matter how he plays the game himself, he will likely give you the correct answer.

If you do stick to the rules I've tried to suggest here, you are going to get much more enjoyment out of the sport than if you just grab a gun and get going. You might as well know now that you are likely going to see every one of them broken. But, you owe it to the sport you want to follow to play it straight . . . you owe it to yourself.

And, over the years you will be one of the first to be asked to go hunting. You will be one of those of whom they say, "He's a real sportsman and a heck of a fine fellow to go hunting with."

Personally, I could seek no greater compliment.

BLACK BEARS CAN BE DANGEROUS

In recent years numerous bears, sometimes with cubs, were seen on occasion along Pennsylvania highways, at garbage dumps, around summer resorts or in winter hibernation dens. Knowing the black bear found in this State rarely molests humans, people have often approached the burly beasts rather incautiously.

The Game Commission therefore advises travelers, vacationers and photographers not to go near live bears in the open under any circumstance. Occasions when black bears most commonly attack humans are: 1. A female protecting her young. 2. A wounded bear, savage when cornered. 3. One voraciously hungry and determined to remove a human who appears to be an obstacle in the path to food.

Black Bruin—Droll Master of Comedy

By Wilbert Nathan Savage

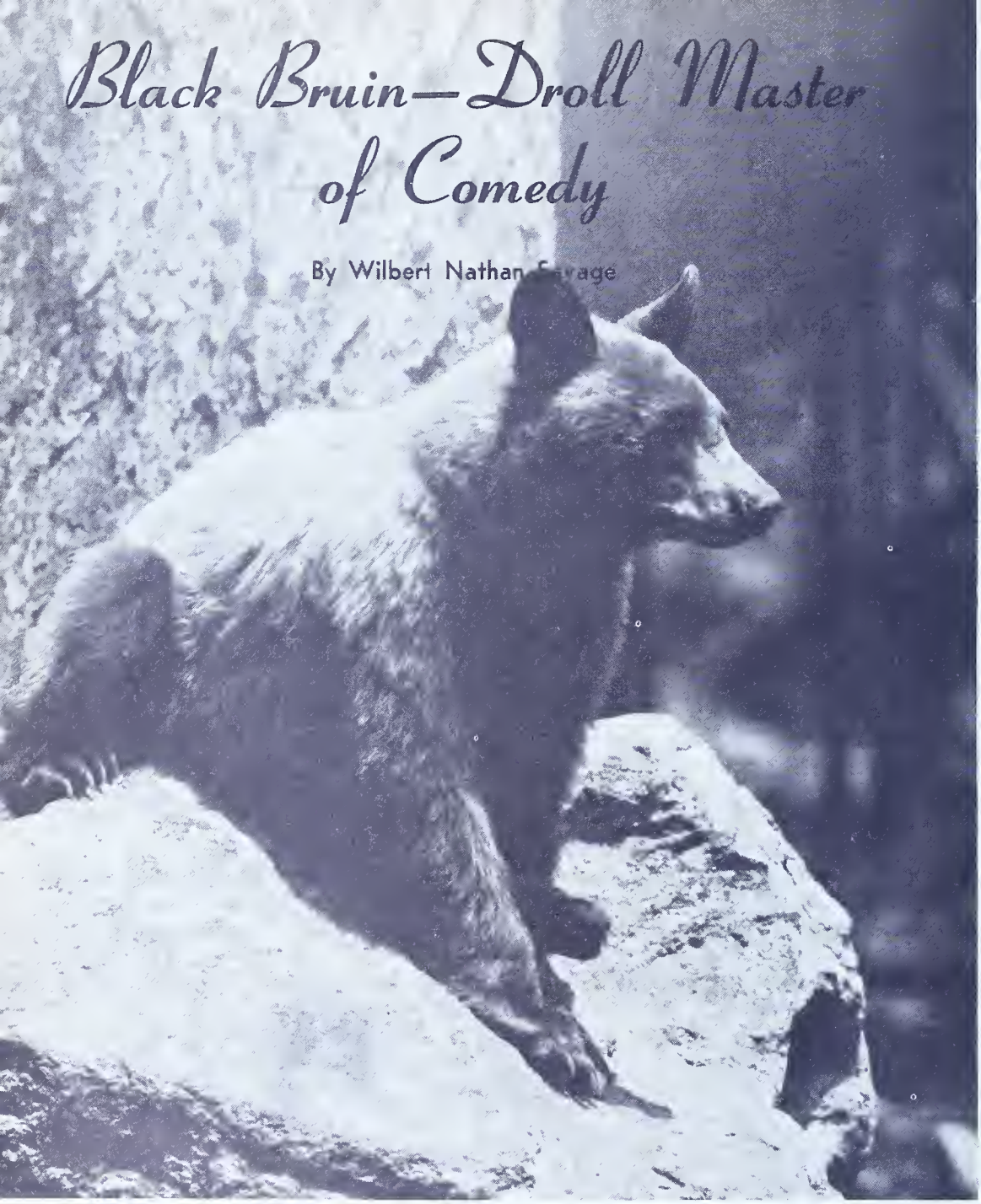


Photo by E. P. Haddon, Fish & Wildlife Service

BACK in 1925 a friend of mine penned a splendid little word-sketch about a pet black bear that had finally deserted the luxury of domesticity and sought out the companionship of *Ursus americanus* clansmen. He said: "We called him Massasoit because of his majestic mein when standing erect. He was friendly, cheerful, almost always hungry; a perpetual humorist at heart, and a steadfast advocate of loyalty and reasonable tolerance. He frequently demonstrated a rare mastery of tact and candor that rendered false impressions of general bearhood dispositions. Within a brief period he could be shy, bold, dainty, slovenly, chivalrous, indifferent, curious, vain, greedy, *ad infinitum*. Now he's

gone, and I hope he will be able to impart some of his inimitable personality to his kind along the countryside . . ."

In recording this abridged biography of black bears in general, I started off with the above paragraph because a study of droll Blackie's habits in the aggregate has definitely revealed to me that his vari-sided facets can rapidly run the gamut of a broad behavior pattern, ranging through clever calculations, smoldering fury, wry humbleness, deadpan contemplation, comedian finesse, plaintive appeals, show-off acrobatics, etc.

The black bear, be he a native of Pennsylvania, New York, Maine, or any other part of the country, is inexorably attached to this natural peculiarity: he's black, in a primary genetic sense, *even if he's brown!* There is no such thing as a cinnamon or brown bear in a distinct species; it's simply a matter of variation in the hair-coloring pigment. The color range of the black bear may even run to the extreme of blondness—yet the creature is a true member of the black bruin tribe!

In the West and Northwest, where cinnamon bears are fairly common, many people still believe that the black bear is of a different type, but alert naturalists long ago uncovered substantial evidence to show that light coats are all a color phase of the genuine *Ursus americanus.* Indeed, cinnamon-colored cubs are born in the same litter with black one! And William H. Wright, author of two books about bears, once recorded: "I have seen black bears of every conceivable shade, from a light cream color through the yellow browns, to a jet and glossy black rarely seen in the East. In Wyoming I saw an olive-yellow member of the black bear clan, and in Montana there are some that are mouse-colored, or steel-blue colored; and around Flat Lake, Montana, there are a number of albinos . . ."

A discussion of the black bear's type variations could not properly end without pointing out the fact that there are actually five recognized sub-species in existence, four of which closely resemble the main type. They are found respectively in Florida, Louisiana, Labrador, and Queen Charlotte Island. The fifth, known as the *glacier bear,* is of a rare bluish-gray and is found in Alaska in the vicinity of Mount St. Elias. Like the cinnamon bear, the glacier bear was formerly thought to be a distinct species, but a litter of young, in which both types were represented, established the true relationship.

If the coloring intricacies of the black bear are remarkable, and his behavior-moods marked by characteristic diversification, then surely his food habits can be modestly called *phenomenal.* For Br'er Blackie will eat flesh like a wolf, grass like an ox, fish like an otter, bugs like a hen, carrion like a coyote, and berries like a bird. He's omnivorous with a capital "O"—and literally that means he'll eat darned near anything that any other animal will tackle, including snails, eggs, crabs, ants, frogs, grain, vegetables of all kinds, fruit, nuts, roots, grubs, and even snakes and skunk cabbage!

In park areas they regard watermelon and sweet corn as special treats. Their fondness for honey is, of course, elementary knowledge, for most school children have early opportunity to read fable and fact tales of Bruin's determined quests for the the product of the industrious bee. Other "goodies" that tickle the palate of the black bear are squash-bugs, caterpillars, and even centipedes!

Watching a bear stir up a "hill" or nest of ants is entertainment *par excellence.* Bruin will thrust his paw into the earthy mound and give it a twist just to make certain that things within are thoroughly stirred up. When the ants pour out to do battle against the disturbance, they

are licked up with alacrity. One observer once said that frequently the bear will allow the ants to angrily congregate on his paw, licking them off greedily as worthwhile quantities accumulate. Another "bearology" enthusiast once declared that he saw a bear move a flat stone to the edge of an ant hill and then pierce the mound in such a way that the ants poured out over the stone. "The bear was kept busy licking his individually arranged dinnerplate," the onlooker related, adding: "He reminded me of a boy eating dessert, and I even imagined I could see him grinning . . ."

The black bear was first protected in Pennsylvania in 1905. The taking of bears by means of steel trap and deadfall was legal in the Keystone State until 1911. Bear population in Pennsylvania has fluctuated through the years; but the efforts of sportsmen with scruples, coupled with good localized protective management and wise legislation have balanced bruin's numbers pretty uniformly. For example, in 1907 only two hundred blacks were killed in Pennsylvania, as compared with 261 in 1952 and 429 in 1951. In 1915, the first year that trapping was prohibited in any form and the number limited to one to a person, only 188 bears were killed. In 1918 the number went up to 387; in 1920 to 420.

An oddity worthy of special note is the fact that black bears have an especially keen sense of humor. Cubs will play like kittens, often going to the extreme of ducking each other in convenient pools. Grizzlies never play together after they've reached the adult stage, but black bears frequently romp together. They will wrestle and roll and stand up and cuff one another. In spite of the fact that they appear sociable enough during these amiable encounters,

Adult black bears seldom travel together. Groups of two or more seen in the fall will most likely consist of a mother and her cubs. This is an important clue for Pennsylvania bear hunters who must not, under the law, shoot cubs.

Photo by James Geron, Fish & Wildlife Service





Photo by Pennsylvania Game Protector John Lohmann, Milford

Here is one of the most remarkable bear photos ever made. Lohmann moved within 12 feet of the 300 pound mother to take her picture on February 6, 1949. Two cubs could be heard squalling in the back of the den.

black bears rarely travel together, except, of course, Ma Bruin and her cubs.

When a black bear hibernates, he'll usually look for a natural den. He isn't as industrious as the grizzly in providing comfortable winter quarters, and he's less particular about the need for weather-proofing and concealment. In short, the entire scope of Blackie's hibernating habits are less rigid and apparently less developed than the grizzly's. Blacks may be out in late December, and even later if a warm spell follows their denning up. Strangely enough, black bears in southern regions den up as early and stay in as late in the spring as do their northern brethren. Even in Mexico blacks are seldom seen out at times which would violate seasonal ethics of a northern U. S. bruin.

Preferring to den up at a low altitude, the black bear is a comparatively light sleeper. In spite of the tales that great violence is required to stir bruin from his slumber, he's actually easily roused, quick to scent danger, and always ready to abandon his retreat and look up a new one if necessary. A pet bear owned by a northern logger once was described as "a very lazy, stupid, sleepy bear when he settled down to his winter's sleep; but never too stupid or sleepy to answer my call."

The mother black bear will allow her cubs to run with her till fall, but she rarely permits them to den up with her. If she does permit them to share winter quarters with her, there's a strong chance that she will not breed the following year, but will allow the cubs to travel about with her until they are fifteen to eighteen months old.

Usually born a few weeks before the end of the hibernating season, cubs grow slowly. At birth they are

tiny (about the size of a puppy born to a forty-pound dog), hairless, and helpless. In the berry season they have been observed eating berries awhile and then nursing the mother until she protested by nudging them away. Very often she begins in August some of the early denials that ultimately go with more rigid weaning restrictions in later weeks. The number of cubs in a litter may range from one to four.

Male blacks will often kill and even eat their own cubs on sight and without visible provocation. Even the mother bear, when separated from her cubs for a few weeks, will so completely forget them that she usually can be counted on to slay every youngster as fast as she can get to them. Yet when they are permitted to live normally without perplexing interruptions, mother bruins are as fiercely devoted to their broods as virtually any animal in existence today.

Black bears almost never pursue or attack humans unless they have been goaded into showing the evil side of their disposition. Their sight is extremely poor; consequently, when suddenly alarmed, they may plunge directly toward the very object they wish to avoid. Their hearing and sense of smell are superbly developed, but there are times when circumstances prevent normal functional application of these warning and guiding devices.

"How clumsy the black bear seems!"

That comment has been worn threadbare. But it is just so many false words, for the lumbering gait of Mr. Bruin is pure deception with multiple degrees of mystifying illusions. In the first place, bears are "plantigrade" or flat-footed; the heel of the foot rests on the ground like a man's. In the second place, they move both legs on one side of the body forward at the same time. This gives them a tricky rolling motion that can carry them along with such misleading swiftness that they could overtake any human runner. They can stop on a dime, too, and rear up and strike out with the agility of a big cat. And when they strike—well, even a padded paw swung full force would put any man down for the *ten* count, or perhaps the *eternal* count!

In the art of climbing, bears are masters—and this in contradiction of the same awkwardness usually associated with their sprinting efforts. The weight of the American black seldom reaches 500 pounds, and much more rarely a bulk of six hundred pounds; yet a hefty fellow can nimbly climb a sapling so slender it will bend under his weight. Or, squirrel-fashion, he can climb a real forest giant—contrary to the common belief that bears can climb only trees they can clasp in such a way that the forelegs are utilized almost to the point of completing a circular "hug." They always back down a tree, like a cat, and their claws always match the color of their coat. A black animal invariably has black claws, a brown anmal brown claws, etc.

Bears are good fishermen. They can flip a fish out of the water with lightning speed. An avid student of bear habits in general once told of seeing a bear catch and eat several fishes, after which "he found a wallow and wallowed like a pig. Then he climbed a tree and took a sunbath. He looked like the crude figure of a bear cast in brown mud. But on close examination he seemed to be the happiest and most thoroughly contented bruin in the world."

For ages almost without number, bears have figured in fables and folk-tales. Some of these unfortunately depict the bear as a stupid animal. This, of course, is untrue, for specialists in the study of animal intelligence rate bears as a group—and the black bear in particular—as animals with amazing capacity for

shrewd application of their powers of instinct and timing. Many stories are told of their patient ingenuity in getting out of cages. They can be taught difficult tricks, such as riding a bike, catching a ball, and so on.

In this country, "bear stories" have been popular since the landing of the colonists, and for untold centuries before, for redmen told solemn tales about exciting quests for animals that made tracks much like those left by their own moccasins.

Many a boy, both red and white, has listened wide-eyed while fireplaces or outdoor flames lighted the features of oldsters who told of mammoth bruins that stood up and savagely beat back a whole "passel" of hounds. In a more modern setting, similar bear stories are told today. Be they tales of the chase or observations that allowed bruin to go on his way, they're a wholesome part of American yarns of adventure. I hope there will always be bear stories, even though, like some of the fish stories, they may lean a bit to the imaginative side. Men delight in telling them. Boys get bug-eyed when they hear them. And the womenfolk know that the world bows to the contentment of the magic hours that vanish all too quickly in the spell of sagas that precious powers of memory sometimes carry with delicate art for four score years or more.



PGC Photo by Batcheler

District Game Protector Miles Reeder, since retired, examines a "cinnamon" bear killed for crop damage near Woolrich, Clinton County in 1950. This unusual color phase of the black bear species was about three years old and weighed 188 pounds hog-dressed.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233)

Of PENNSYLVANIA GAME NEWS, published monthly at Harrisburg, Pennsylvania for 1954.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Commonwealth of Pennsylvania, Pennsylvania Game Commission, Harrisburg, Pa. Editor, Willard T. Johns, Jr. Managing editor, None. Business manager, None.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Commonwealth of Pennsylvania, Pennsylvania Game Commission, Harrisburg, Pa.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

WILLARD T. JOHNS, JR.

Sworn to and subscribed before me this 24th day of September, 1954.

(Seal) FLORENCE E. DYER
Notary Public.

(My commission expires February 1, 1957)


DON
STEVENSON

Setting Our Sights

By N. R. Casillo

Illustrated By Don Stevenson

IT HAD been one of those red letter days—perfect weather, ideal working conditions and a limit bag of grouse. That evening, however, while attempting to make our way back to the parked cars and subsequently to our respective families and eagerly anticipated Thanksgiving dinners, the party of five supposedly seasoned woodsmen became hopelessly lost.

The locale of this not so extraordinary incident was a wilderness fastness in Pennsylvania's most sparsely populated county. Pinpointed, it was in a vast tangle locally known as Buzzard's Swamp. Many who have trod its treacherous terrain have come to grief.

The reactions of the various individuals involved were rather interesting to observe. Two marveled at the fact that heavily populated Pennsylvania still had enough wilderness area to permit one the privilege of getting lost. Two were confused and overwhelmed both by the experience as well as by the immensity of the forested hills.

Later that evening, while huddled about a fire and longing to sink appreciative teeth into succulent turkey thighs, Chet broached an opinion.

"No one will ever be able to convince me that our forests are done for," he growled after a hostile scrutiny of the encircling hills.

"Nor that game is on its way out," Bill chimed in as he surveyed what remained of our ten grouse, five of them having been eaten for supper. Bill, it may be added, disposed of two of the savory tidbits.

For a long minute only the occasional crackle of the fire broke the cold silence. Then George cleared his throat to offer an observation. "If you chaps were by your own fire-sides you probably wouldn't have said what you did."

This time the ensuing silence was broken by the snort of a curious deer and an explosive "Hell I wouldn't!" from Bill as he edged closer to the fire.

Ted, a consulting psychologist by profession, who had apparently appraised the situation, declared that too many of us are still blinded by the immensity of the out-of-doors. "What is more," he continued, "this same immensity makes us acutely aware of our abject helplessness as individuals when confronted by natural forces with which we are not entirely familiar."

"In more simple language," George interposed with a wry smile, "we're pretty small potatoes."

"Especially if the individual suddenly comes in contact with the more savage aspects of his environment," continued Ted. "And nature can change mighty quickly, the change depending entirely on the situation as well as on the adaptability of the one concerned."

"You've got something there," George agreed. "Today while everything was going along in our favor, I really had a genuine affection for the old dame. However, now that the tables are turned I'm not so keen about her woods and templed hills.

Grunts of approval from both Bill and Chet acclaimed George's brilliant bit of exposition.

"That's been man's attitude toward his surroundings since the very beginning," Ted observed as he reloaded his pipe. "You may recall that so long as primitive man strung

along with nature and took no more than he needed, he got along fine. But, just as soon as he began to pile up wealth just so he could lord over those who had less than he, he tossed a monkey wrench into the machinery." Ted had cleverly switched the trend of the conversation.

"Yep, that's exactly what happened when man became gregarious," George reminded.

"And when men began living together it marked the beginning of the end." This from Chet.

"How do you figure?" challenged Ted.

"Easy," Chet came back. "They had to destroy in order to live and progress."

"So?"

"So, as the population increased they naturally had to destroy more," reasoned Chet. "It won't be long now until there won't be anything more to destroy," he added dismally.



"That's a good point," George acclaimed.

"A point which can be carried a bit further," said Ted. "For instance, since modern man is essentially the same in nature as his primitive forebears we can expect the destruction to continue until society or some other equally powerful force steps in and takes over."

"Meaning, of course," George pursued, "that man's individual and personal attitude toward nature is still one of antagonism, especially since he does not completely understand the natural forces which make it click as it does."

"Bill arose and yawned. "Aw, lay off the scientific stuff—and besides there's nothing to worry about," he scoffed. "Long before our descendants ever begin to feel the pinch of hunger we will have been dead and gone for centuries, maybe hundreds of them."

"That's what makes the whole mess even worse," Ted slowly pronounced. "We're concerned only about our own precious hides and possibly, those of our immediate kinsfolk."

"And only for the time being," appended George.

"Well, you've heard it said that God helps those who help themselves," Bill came back, grinning grotesquely at his apparent wit.

"I daresay that God was never wholly in accord with that saying," contended Ted.

How much longer that discussion might have continued is anybody's guess had we not been electrified by the sounds and lights of a laboring truck as it topped a hill less than a couple of hundred yards away. As one, we tore through the forest toward the vehicle and in less time than it takes to relate we were on the road we had so vainly sought. As it turned out, we were hardly more than a mile from our parked cars. I sat down to my Thanksgiving dinner around midnight.

The theme of what to me was a memorable discussion that evening by the campfire revolved about that ancient truism of *man's inhumanity to man.* That, it seems, is our exact attitude when dealing with our natural resources. We treat them as if they were meant for us alone. *Let those who are to follow get along as well as they can.* The italics are mine.

Personally, not many men are concerned about the impoverished earth which they may pass on to posterity. Further, usually, those who are profitting most from their exploitation of nature are the ones who are apparently least concerned about the future, especially when it concerns their fellow man.

Paradoxically, as the economic status of a people reaches a high level there is a tendency to forget that their individual well-being is largely due to the prodigious generosity of a bountiful earth. As a matter of fact, it is only in retrospection that even those who give an occasional thought to leaner times see a shadow on the future. But the shadow, so they think, is so far in the future as to make them heedless of its portents.

What happens? As the shadow lengthens, man attempts to avoid it by erecting a still higher barrier against the very world that has enabled him to achieve his position. In other words, man has had the wit and intelligence to take advantage of the earth's beneficience but he lacks the good judgment to see that he is gradually pulling away from those things which have made him what he is. After all, the efficiency and well-being of a great city, a nation and even civilization itself depend on the available natural resources.

Earth has impassively witnessed the passing of many and varied forms of life when they, for some reason or other, ceased to fit in her pattern of living. Again and again, numerous plants and animals have developed from a lowly origin to a position of



world supremacy, maintained themselves for a comparatively brief geologic period and then disappeared forever.

Except under extremely unusual conditions no species of the more highly developed mammals have survived for more than two or three million years. Half a million years may be considered the average span for highly organized and complex organisms.

How does this average apply to man? Are we changing our environment so radically that despite our intellectual and moral resources man may be forced to conform to it? If the average applies, we may expect half a million years more of this existence and then either oblivion or progressive development into some type of descendant better equipped than we to cope with the environmental factors of that distant future. *Homo sapiens* has to his credit only fifty thousand of the more than a million and a half years that the genus *Homo* is thought to have been in existence. In other words, a succession of human species have already appeared and disappeared. We may be the

latest product of the earth's creative forces, but we have no reason to believe that we are the ultimate production.

Once I heard an eloquent speaker declare that the parents of America would see to it that our country remains unspoiled for "their children and their children's children." Certainly, parents are concerned about the future welfare of their children, but how many parents are aware of the fact that their loved ones' welfare depends on the reasonable and wise use of our natural resources? It's the rare parent indeed, who realizes that the personal and educational as well as the utilitarian equipment of the child will avail him nothing if those things upon which his living depends are destroyed.

One of the chief reasons for the public's apathetic attitude toward conservation is because the great majority of individuals making up the American public are not personally and directly affected by the lack of any particular resource or product made from it, the prevalence of high prices notwithstanding. For example, a school child is not particularly impressed when told by the teacher that practically 85 percent of the streams east of the Mississippi are polluted when the child knows full well that he can step up to any one of the several drinking fountains in the school building or anywhere else for that matter, and get an unfailing supply of pure drinking water merely by depressing a pedal or turning a faucet. By the same token one is not greatly excited by the fact that a great slice of the world's populace has virtually reached the starvation point.

When the prices of commodities are high or unusually low, one ordinarily attributes the price levels in vogue to the so-called law of supply and demand, a natural course of events understood by the most untutored housewife. However, how many are actually aware of the conservational aspects involved and their effects on prevailing prices? Even if they were aware of any such implications what could they hope to do about it? In other words, the problem appears so overwhelmingly complicated as well as inextricably correlated with other factors as to appear well nigh insurmountable. Then, again we are lulled into a lethargic inaction by being assured on many sides that something is being done to preserve our country's resources. Indeed, we're told that modern agricultural science will revive mistreated soil, make the desert bloom by irrigation and increase the crop yield by modern and better farm practices. Do you wonder that so many people have little or no concern about those things which are responsible for maintaining life here on earth?

Why is the sportsman invariably dragged into the conservation picture? Be it forestry, soil technology, stream pollution or the 1001 other phases of the subject that may be under discussion, sooner or later the sportsman and the role he plays in the overall or specific situation inevitably comes up. The general belief is that hunters, fishermen and other devotees of the outdoors are inseparably bound to the doctrine of the wise use of our resources. We have every reason to be proud of that trust.

Since the instinct to hunt and fish is so deeply ingrained in man, he has of necessity exercised it; at first to furnish him with those things necessary to maintain life and then as an expression prompted by an impulse difficult to thrust aside. Modern sport hunting is simply a manifestation of man's virile past. It not only proves his mastery over the lesser creatures, but also reveals him as their most devoted champion. What is more, it keeps him in contact with the elemental things so necessary for a normal life.

The sportsman's capacity for outdoor pursuits has resulted in the development of many related interests. It is doubtful if primitive man ever admired or even saw the beauty of an animal or a tree or even a colorful flower; the sense of the esthetic developing long after his love of the chase was well entrenched. These so-called intangibles which a modern sportsman prizes so highly were recognized as such only after a long evolutionary process.

Now, we cherish the symmetry of a tree, the cool recesses of the noonday forest, the tumbling waters of a mountain stream—yes, even the sagacity of our quarry. Because of their keen perception and appreciation developed by understanding, sportsmen have come to value these adjuncts in many cases more highly than the mere bagging of game.

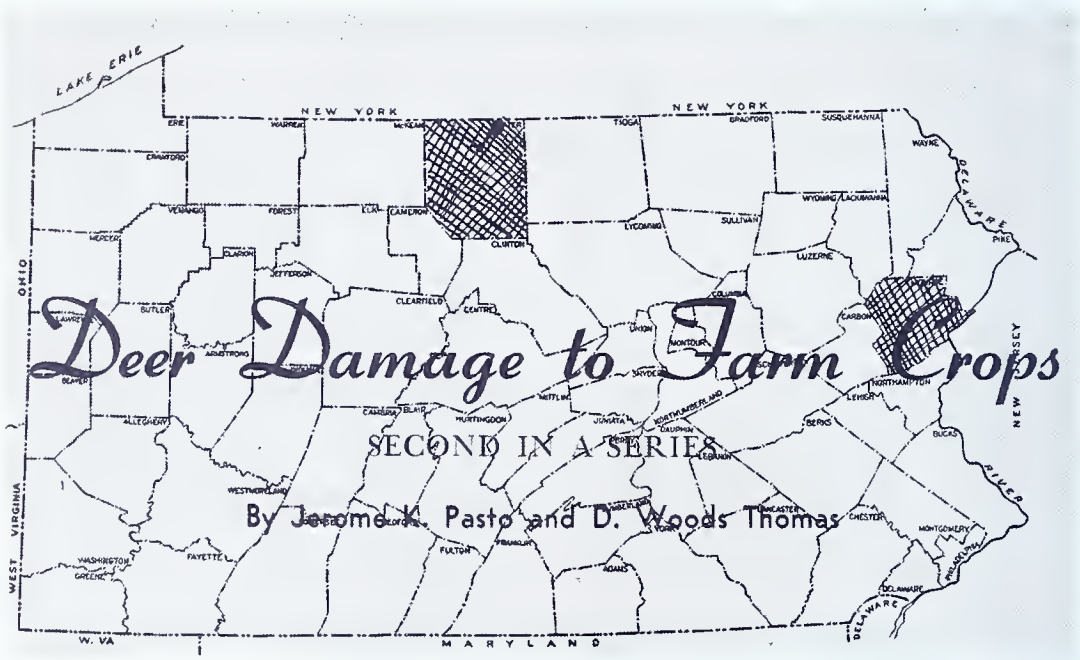
Those of us who are more elemental still insist that the epitome of the chase is the bringing home of the bacon. Here, we are but satisfying another primitive emotion, that of approval by our fellows in being able to outwit our game. Who doesn't admire an expert woodsman or a good shot?

Since the outdoorsman realizes more than any one else that the wasteful exploitation of our natural resources spells doom to his sport, is it any wonder that he tries to spread the doctrine of wise use? To those who are not conversant with the charm of the outdoors this seems like an inconsistency. But, if you have trod the pine and moss carpet of a coniferous forest or slaked your thirst at a crystal spring amidst a bower of dank ferns or seen the sun rise from the early morning mists as you watched from the vantage point of a mountain top, then, in a measure you'll understand what to the average individual seems so absurd. The pity of it all is that there are so few so close to these elemental things.

Accordingly, the ball must continue to be carried by the sportsmen. However, they can enlist an ally, a most powerful ally—the schools of our country. Each and every child can be so thoroughly imbued or indoctrinated with the concepts of conservation as to make him a potent factor in the future determination of our fate. Succinctly, the idea is to produce a generation of children so impregnated with the necessity for using wisely our natural riches as to leave no doubt about their future direction in dealing with the problem. There are those who would call this regimentation, yet, it must be conceded that the method is an effective one. Why hesitate to use it for a worthy cause?

Conservation can be taught in all the grades not only as an adjunct to other courses but also as a formal course. Any one can readily see that by so doing the child would become as conversant with it as he now is with reading, writing, and 'rithmetic. This is no time to haggle among ourselves as to which would be the most effective method, i.e., taught as an adjunct or as a formal course. The idea is to get it into the curriculi and make its teaching compulsory.

Twenty-eight and one-half million licensed hunters and anglers! The influence which they can exert to help put this program across is beyond reckoning. They are already largely responsible for showing the way toward a greater appreciation of our country; the zest in living the American way through their understanding derived from participation in those activities which have made us what we are. All this with a determination that the things making this possible shall not go for the sole aggrandizement of a few whether they are individuals or nations.



Deer Damage to Farm Crops

SECOND IN A SERIES

By Jerome K. Pasto and D. Woods Thomas

TAKE three jiggers of truth, mix with about two jiggers of half-truths, stir with a prejudiced mind, and you have a cocktail that comes mighty close to the claims and counterclaims on deer damage to farm crops.

This sad state of affairs should come as no surprise. It exists because no one has studied deer damage on a large enough scale to really learn very much about it. After all, it *IS* difficult research, and it requires a lot of time, money and effort. But the Pennsylvania Cooperative Wildlife Research Unit at Penn State decided to do something about it, and they enlisted the help of others at the University. This story reports the amount of physical damage to farm crops by deer. (In last month's GAME NEWS we discussed some of the issues involved in deer management.)

The Study Area

In tackling this research problem, the first question we had to settle was where in the state to study deer damage. Obviously it had to be in deer country, but there is a lot of deer country in Pennsylvania. It was clear that we couldn't study all of it. We set up this requirement: it had to be an area that had both deer and farming. This eliminated a number of counties because they don't have many deer. A few other counties also were tossed out because they don't have very many farms. We used the county deer-kill records of the Game Commission to help spot "deer counties," and the U. S. Census of Agriculture to spot counties in deer country that had a considerable amount of farmland. Several counties satisfied our requirement, but the pointer finally settled on Potter County in north-central Pennsylvania and Monroe County in the northeastern edge of the state.

Potter County farming is mostly dairy, but some farms depend entirely on crops, especially potatoes. About 84 per cent of the cropland is in hay, oats, and corn. Farming in Monroe is mostly of the poultry-dairy type with about 80 per cent of the cropland in hay, oats, corn and wheat. As you might figure, in both counties hay is the most widely grown crop. In Potter County it occupies 57 per cent of the cropland,

and in Monroe County 41 per cent. According to the 1950 census, about 29 per cent of all the land in Potter County was in farms. The equivalent figure for Monroe County was 23 per cent. The value of all farm products sold in Potter County in 1949 was a little over four million dollars, and in Monroe County slightly over two million dollars.

The Farms

We found that Potter County had 752 farms with 20 or more acres in crops, including hay, and that Monroe County had 307 such farms. In order to save time and expense on the field work, we didn't study farms with less than 20 acres in crops. Furthermore, any one with less than 20 acres isn't likely to be doing much farming.

Farms in Potter County average about 250 acres total, with about 70 acres of cropland, 90 acres of woods, and the rest in pasture and farmstead. In other words, there are more acres of deer habitat on the average farm than there are of cropland. This spells trouble for the farmers because it's a combination that is a "natural" for deer damage. Monroe County farms average almost 200 acres, with 77 in crops, about an equal amount in woodland, and the rest in pasture and farmstead.

How We Made the Study

We personally visited 170 farms in Potter County, and 67 farms in Monroe County. This was a full summer's work for four men. The farms visited were a random sample of all kinds of farms found in these counties—they

This is an aerial photo of a small section of land in Potter County. It shows a typical combination of farmland and deer habitat—a combination which is a "natural" for heavy deer damage. The dark areas are woods and the lighter, shaded areas are crop fields and pasture.



included some big ones and some little ones—some that had deer damage, and some that had none—some that grew many crops, and some that grew few crops.

We had an aerial photograph of every farm, and by means of a questionnaire to guide us, we were able, with the farmers, to work out estimates of the reduction in crop yield on each field that had been damaged by deer. Of course we were especially careful to make our figures as accurate as possible. For example, most everyone knows that the shaded area next to woods seldom produces as much crop as the part of the field farther away. We also know that deer damage is likely to be heaviest in the area bordering the woods. All of the reduction in crop yield next to woods could not be blamed on deer, and allowance was made for this fact. On the other hand, damage in some fields was so slight, that estimates of the amount were not possible. All in all we figure we came about as close to the actual damage as is humanly possible.

What We Found

Our damage figures are for the 1951 crop year. Damage to crops by deer was done by grazing, trampling, pawing, and by bedding down, but we did not attempt to separate the three kinds of damage. On the average, farmers figured that grazing accounted for about two-thirds of the damage, and the other methods the balance.

In Potter County 62 per cent of the farms suffered crop damage by deer, on over a thousand different fields. As would be expected, more of the farms in the heavily-wooded southern part of the county were damaged than in the northern part where woods aren't as abundant. In Monroe County about 45 per cent of the farms had crop damage, on a little over 300 different fields.

The average size of the damaged area on farms that deer had worked over was about 11 acres in Potter County and 10 acres in Monroe County. Approximately 10 per cent of the total crop acreage in Potter County was injured, and about 8 per cent of it was injured in Monroe County. It should be pointed out, however, that in general the crops that were hardest hit were of higher value than the crops that were not so hard hit. Table 1 summarizes the overall extent of deer activity in the two counties. This is the first indication we had that deer do more damage in Potter than Monroe County.

Kinds of Crops Damaged

Deer will eat practically any vegetation that grows—from woody shrubs to corn on the cob. This is indicated by the wide variety of crops the farmers reported as foraged by deer, Table 2. Considering the crops as a whole, hay, oats, buckwheat and corn were the most widely damaged crops. Occasionally deer must have topped off their meal with dessert, judging by the damage reported to raspberries and strawberries.

Crops Deer Like

In Table 2 we show that of all the crops that were hit by deer, oats and hay headed the list in both counties with the most acres damaged. The reason for this is that oats and hay were the two most widely grown crops, and naturally they would suffer a lot of damage.

But which crops did deer actually prefer? In other words if a dish composed of equal portions of the various crops were placed before the deer, which would they eat first, and which would they leave? Howard Johnson and his restaurants with 28 flavors of ice cream certainly know which flavors move the fastest. So it is with deer and their choice of feed—they prefer some "flavors" over others. But what a deer finally chooses to eat depends on what else is available. Unlike some animals



Two of the research workers examine deer damage in an oat field. The stake in the background marks one corner of a control plot.

which partially solve their food problem by hibernating in winter or other animals which cache away a food supply, deer must eat whatever is available at the time they get hungry —and this is pretty often. Deer are faced with a life of feast in the summertime, and a life of famine in the winter, and of course it's the famine period that partly regulates deer numbers.

During the growing season, deer in farming areas have the choice of many crops, and they certainly exercise this choice. In one case we noticed that deer walked across a field of very young corn to get at a field of oats. Had the oats not been present, they might have chosen the corn over the hay which also was available. The stage of maturity of the plant is important too. They prefer to husk mature ears of corn for themselves, but ignore the young corn plants. Buckwheat is uninteresting in the middle stage of growth, but they do like it when it is young and again when it heads out. Farmers told us that potatoes are damaged by being pawed out of the hill. In many cases, however, it appeared that deer didn't eat the potatoes, but dug into the hill in search of minerals in the form of fertilizer. Other researchers have reported that deer will choose a fertilized crop over an unfertilized crop of the same kind—in search of that something-or-other that gives them a balanced diet. In mixed stands of hay, deer nipped the tender tops of clover and alfalfa plants, but ignored the grasses. Many farmers reported that deer especially like new seedings.

In the two counties studied, which crops did the deer actually prefer? Take a look at Table 3. For the doubtful honor of being the most preferred crop, buckwheat takes the crown. In Potter County, 44 per cent of all the buckwheat acreage was damaged by deer, and buckwheat also headed the list in Monroe County. In both counties, corn for grain, snap beans and oats are high on the list in terms of deer preference. But notice that the order of preference is not the same in both counties. This is because the choice of crops was somewhat different in the two counties. Notice too that hay is far down the list of a crop preferred by deer.

Table 1—Summary of the Amounts of Deer Damage to Crops in Potter and Monroe Counties, Pennsylvania, 1951.

Item	Potter County	Monroe County
Number of farms damaged in county	466	136
Per cent of farms damaged in county	62	45
Number of fields damaged in county	1,037	312
Total acres of crops damaged in county	5,244	1,876
Per cent of total crop acreage in county that was damaged	10.0	7.7
Average number of fields damaged per farm	2.2	2.3
Acres damaged per farm incurring damage	11.3	9.9
Per cent of crop acreage damaged per farm that had damage	17.0	20.4
Number of different crops damaged	15	11

Severity of Crop Damage

When deer graze on a field, they seldom destroy the entire crop. Small patches may be nibbled down to almost nothing, especially in the case of grain crops. Deer are apt to return to these grazed spots time and again because periodic grazing keeps these areas tender and juicy, while the ungrazed areas become tough as the plants mature. The grain seedlings in the grazed area eventually are killed and replaced by weeds.

In Potter County we discovered that on the average, deer reduced the crop yields on damaged areas by 38 per cent. On fields in the heavily wooded sections the reduction was 44 per cent, and in the less heavily wooded areas about 34 per cent. In Monroe County the yields were reduced by an average of 27 per cent.

If it is true that deer especially like some crops, then it would seem that these crops would be damaged more severely than crops they care less about. We discovered this logic to be true, especially in Potter County. There the yields of both buckwheat and snap beans on damaged fields were reduced by 66 per cent. This left 34 per cent of the crop for the farmer. Yields of corn for grain on damaged areas were reduced by 58 per cent. Next in order came wheat, corn for silage, peas, oats, potatoes, and hay. Notice that hay was the least heavily damaged crop. Previously we noted that of the crops grown in Potter County, hay was the least preferred by deer.

Damage and Distance to Habitat

The casual observer knows that deer don't wander too far from cover, and that this carries over to their grazing habits. Almost two-thirds of the damaged fields were next to woodland. The number of damaged fields dropped off rapidly as the distance from woodland increased. Only 8 per cent of the damaged fields were beyond 450 feet from deer habitat. The fields next to woods also were more severely damaged than were those farther away. This means that farmers located next to deer habitat take the real brunt of deer damage. This fact was further evidenced by some work we did on farms near the Barrens of Centre County. The Barrens are a favorite deer habitat. Farmers next to this habitat reported heavy damage, but those as little as one farm away reported only slight or no damage. It appears that distance from habitat (and not very much distance

at that) is one of the best "insulators" against deer damage. To the buyer of a farm in deer country, this would be valuable knowledge indeed.

Damage by Time of Year

Farmers reported that deer damaged their crops during all months of the year, but as one might expect, damage was especially severe during the summer months. Winter grain crops were grazed during the cold months when other feed was at a minimum. Considerable pawing of the grain plants was reported during the winter months. When the snow was too deep for this, the deer pulled back into the forests and worked over the trees and shrubs. Damage to pine tree plantations was severe during the hard winters, according to the farmers we talked to.

Damage to hay crops was most severe in early spring while the plants were still young and tender. Potatoes and corn for grain were attacked in the fall after the spuds had formed and the ears set.

Trends in Crop Damage

Specifically we studied crop damage for the year 1951 only. Over a long period of years farmers reported that deer damage has been on the increase. But what about trends in the more recent years? We asked the farmers their opinion as to the severity of crop damage in 1951 (the year we studied) compared with damage in 1950 and 1949. The gist of what they told us was that crop damage in 1950 and 1951 was about the same, but that in 1949, damage was greater than in either of the two first mentioned years. We didn't search into the reasons why 1949 was a bad year

Table 2—Kind of Crop and Number of Acres Damaged by Deer in Potter and Monroe Counties, Pennsylvania, 1951.

Crop	Potter County		Monroe County	
	Number of acres damaged	Per cent of all damaged acres	Number of acres damaged	Per cent of all damaged acres
Oats	1,764	34	269	20
Hay	1,710	33	306	23
Buckwheat	433	8	172	13
Corn for grain	308	6	245	18
Wheat	226	4	195	14
Peas	169	3	—	—
Potatoes	140	3	25	2
Corn for silage	127	2	—	—
Pine trees*	114	2	—	—
Snap beans	108	2	55	4
Rye	—	—	38	3
Barley	50	1	32	2
Clover seed	40	1	—	—
Strawberries	14	**	3	**
Kidney beans	6	**	—	—
Sweet corn	5	**	—	—
Other crops	30	**	3	**
Total	5,244	100	1,343	100

*Plantations **Less than 1 per cent

Table 3—Deer Preference for Crops as Shown by the Rank of Crops According to Per Cent of the Total Acreage Damaged. Potter and Monroe Counties, Pennsylvania, 1951.

Crop	Proportion of total acres grown that were damaged by deer	
	Potter	Monroe
	(per cent)	(per cent)
Buckwheat	44	23
Corn for grain	27	7
Snap beans	17	15
Oats	16	7
Peas	15	—
Wheat	14	6
Potatoes	8	—
Hay	6	3
Corn for silage	4	—

for crop damage, but surmised that the size of the deer population, the number of deer killed, the severity of the winter and the kinds of crops grown were important reasons for this.

Change in Farm Practices

Deer damage in some places is so severe that farmers have to change their cropping plans in order to cope with the situation. About half of the Potter County farmers and 20 per cent of Monroe County farmers told us that they had to do this. This adjustment was made in three ways:

- They discontinued growing crops especially susceptible to deer damage.
- They planted deer-preferred crops near the farmstead, and away from the deer habitat.
- They abandoned some fields altogether because of the severity of damage, regardless of the crop planted.

There is another kind of snubber that farmers in deer country experience. It is that the individual farmer cannot deviate very much from the kind of crops and time of planting of his neighbors, even if on his farm it would be a very profitable crop or practice. If he plants a deer-preferred crop and his neighbors do not, the result is obvious—he alone feeds the whole herd.

One farmer reported that he liked to plant his oats early in the spring. This is a good farming practice. His neighbors, however, did not plant oats until about three weeks later. He soon discovered that while the deer were waiting for the neighbors' oats to peep out of the ground, they practically destroyed his. This farmer now plants his oats about the time the rest of the community does, in order that the deer damage will be shared.

These last two situations penalize the progressive farmer. He can move forward no faster than his neighbors in choosing new crops, especially if deer like them. He can not plant at a time different from the usual.

Next

In the next issues we will report on what this crop damage means to farmers in dollars and cents. And important to both the hunters and the folks who live in Potter and Monroe Counties, we'll have figures on how much money deer hunters spend while hunting deer, what they spend it for, and who gets it.



PGC Photo by Steve Liscinsky

The Pennsylvania Cooperative Wildlife Research Unit

RESEARCH STUDIES

By Ward M. Sharp and Robert G. Wingard

Organization, training and accomplishments in research of the Pennsylvania Cooperative Wildlife Research Unit have been reviewed in October and September issues of the GAME NEWS. The Unit is a cooperating agency coordinating the wildlife program at the University with the needs of the Game Commission so that undertakings are mutually beneficial.

Wildlife management is a recognized profession in the science of applied agriculture. If the game and fish programs are to keep pace with progress in related fields in the future, more and more of the men employed must be better fitted to fill the positions. With a backlog of trained men for employment by the various state and federal agencie we cannot expect effectively to reach the interested public or to manage our wildlife resources adequately.

Findings resulting from wildlife research over the past 10 to 15 years have contributed greatly to our knowledge. In spite of this progress we have merely scratched the surface in solving the many research and management problems that confront us. In the first place, this is a new field in which little was known until 20 years ago. Also, it takes time to accomplish many of the objectives. The successul conclusion of one objective may only be a part of the overall jig-saw puzzle involving a single game species.

Cottontail Rabbit Studies

A study area comprising 91 acres was established on the University Farms in 1948 so that investigations of cottontail populations and mortality could be carried on over a period of several years. The site was situated on land under intense cultivation that possessed intervening undisturbed fencerows and other adjacent natural cover. The area has been subjected to heavy hunting pressure during the small game seasons.

An annual record has been maintained on reproduction and mortality occurring in the population. Spring and fall populations were

determined by live-trapping and ear tagging. A fall census initiated in 1948 and continuing through 1952 revealed a population of 98, 136, 123, 147 and 85 rabbits present each October.

Mortality due to hunting, highway and predator kills was recorded. Loss due to vehicles on the paved highway extending along the west side of the tract has been second to that of the hunting kill. Twenty rabbits or 66.7 per cent of all observed mortality *other than hunting,* from September 1951 to June 30, 1952, was due to highway traffic. Loss due to predators was negligible in spite of the fact that foxes, hawks, owls, and weasels frequented the area. When habitat conditions are optimum throughout the year for the cottontail, natural reproduction will maintain a good shootable fall population season after season.

Grouse Investigations

A ruffed grouse population study has been conducted in the Barrens of Centre County on a tract of land comprised of 1468 acres located on State Game Lands 176. Population studies begun in 1938 by the Department of Zoology and the Unit, were interrupted by World War II. Population, mortality and seasonal life history investigations started in 1946 have continued uninterrupted to date. The work begun during a low in population and is planned to cover a period of at least 10 years. Habitat management was initiated in 1949.

From a fall population of 38 birds in 1946, they gradually increased until their numbers totaled 145 for the autumn of 1948. This increased

(Continued on Page 35)

Here a student at the Pennsylvania Cooperative Wildlife Research Unit prepares to band a ruffed grouse caught in a unique live-trap devised by research personnel.



A SPORTSMAN'S MAP OF—

Somerset County

Forty-Fourth In A Series

Note: This center sheet can be removed, if desired, without damaging the magazine by loosening the two center staples.

Land Area

Somerset County contains 694,528 acres of which 372,786 acres are forested. Publicly owned land totals 31,905 acres, including 12,425 acres of State Game Lands.

Topography

The county lies in the highlands along the southern border of Pennsylvania and extends from the western slope of the Allegheny Mountains as far as Laurel Ridge on the west. The Youghiogheny River rises in the southwestern part of the county, its main tributary being Casselman River. To the southeast is the highest point in Pennsylvania occupied for habitation—Pocahontas, 2,665 feet above tide water. Negro Mountain, eight miles west of Meyersdale, rises to 3,123 feet, the greatest elevation in Pennsylvania. In the northern part of the county is Quemahoning Reservoir, one of the largest artificial bodies of water in the State.

Transportation

Railroad transportation is furnished by the Baltimore & Ohio, the Western Maryland, and the Pennsylvania lines. The Pennsylvania Turnpike, the Lincoln Highway (U. S. 30), U. S. Route 219 and other important routes traverse the county, which has 745 miles of improved State highways.

District Game Protectors

District Game Protector G. E. Hay, Box 61 (R. D. #2), Somerset (Phone 6785) has jurisdiction over the following townships: Conemaugh, Jenner, Lincoln, Quemahoning, Paint, Ogle, and Shade.

District Game Protector E. W. Cox, R. D. #5, Somerset (Phone 6701) has jurisdiction over the following townships: Jefferson, Somerset, Stony Creek, Brothers Valley, Allegheny, Fairhope, Northampton, Larimer, and Southampton.

District Game Protector R. V. Rea, 506 Page Street, Confluence (Phone 4921) has jurisdiction over the following townships: Black, Milford, Middle Creek, Upper and Lower Turkeyfoot, Addison, Elk Lick, Greenville, and Summit.

Fish Warden

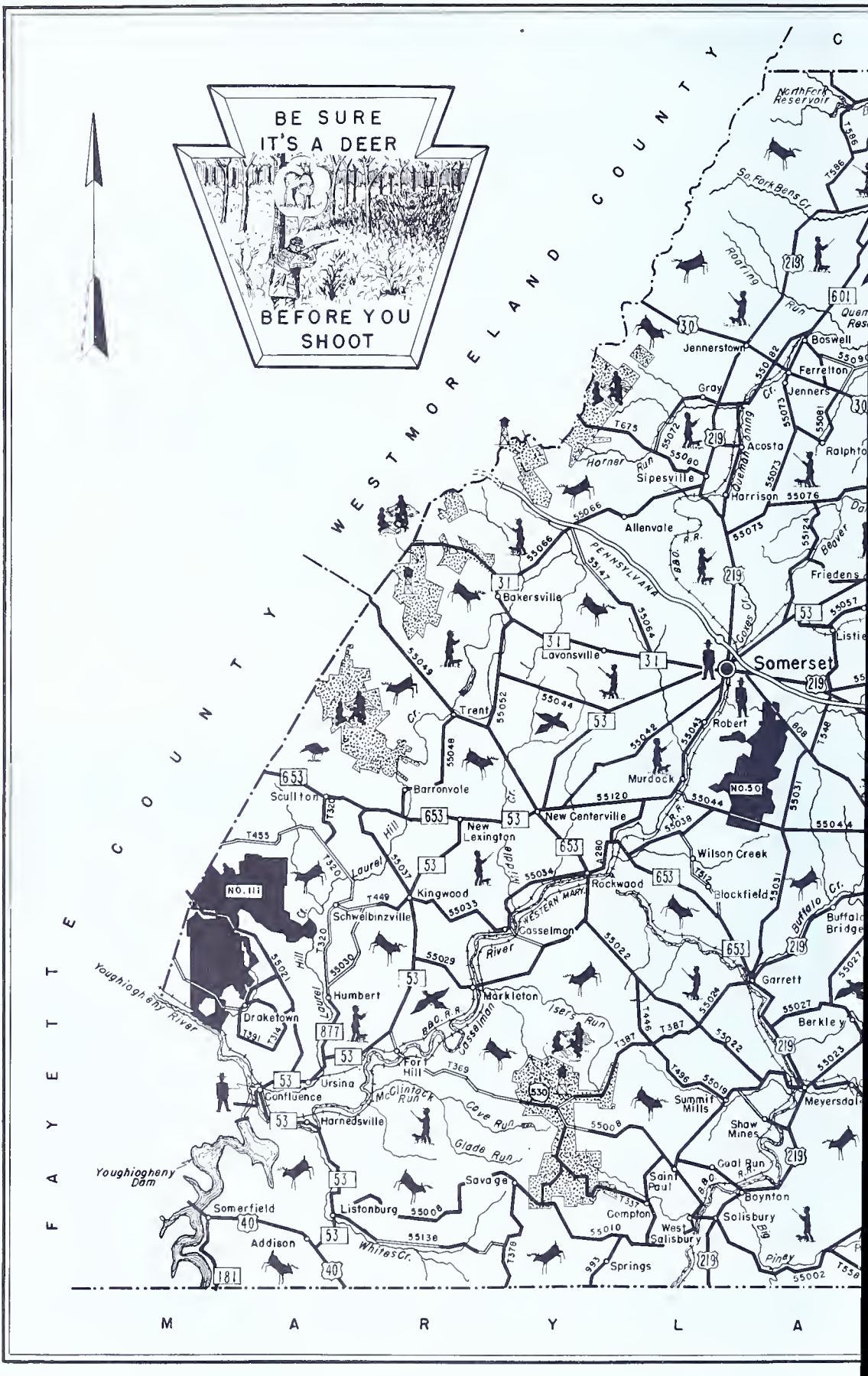
Fish Warden Minter C. Jones, 361 W. Lincoln Street, Somerset (Phone 5324) is assigned to this county by the Pennsylvania Fish Commission.

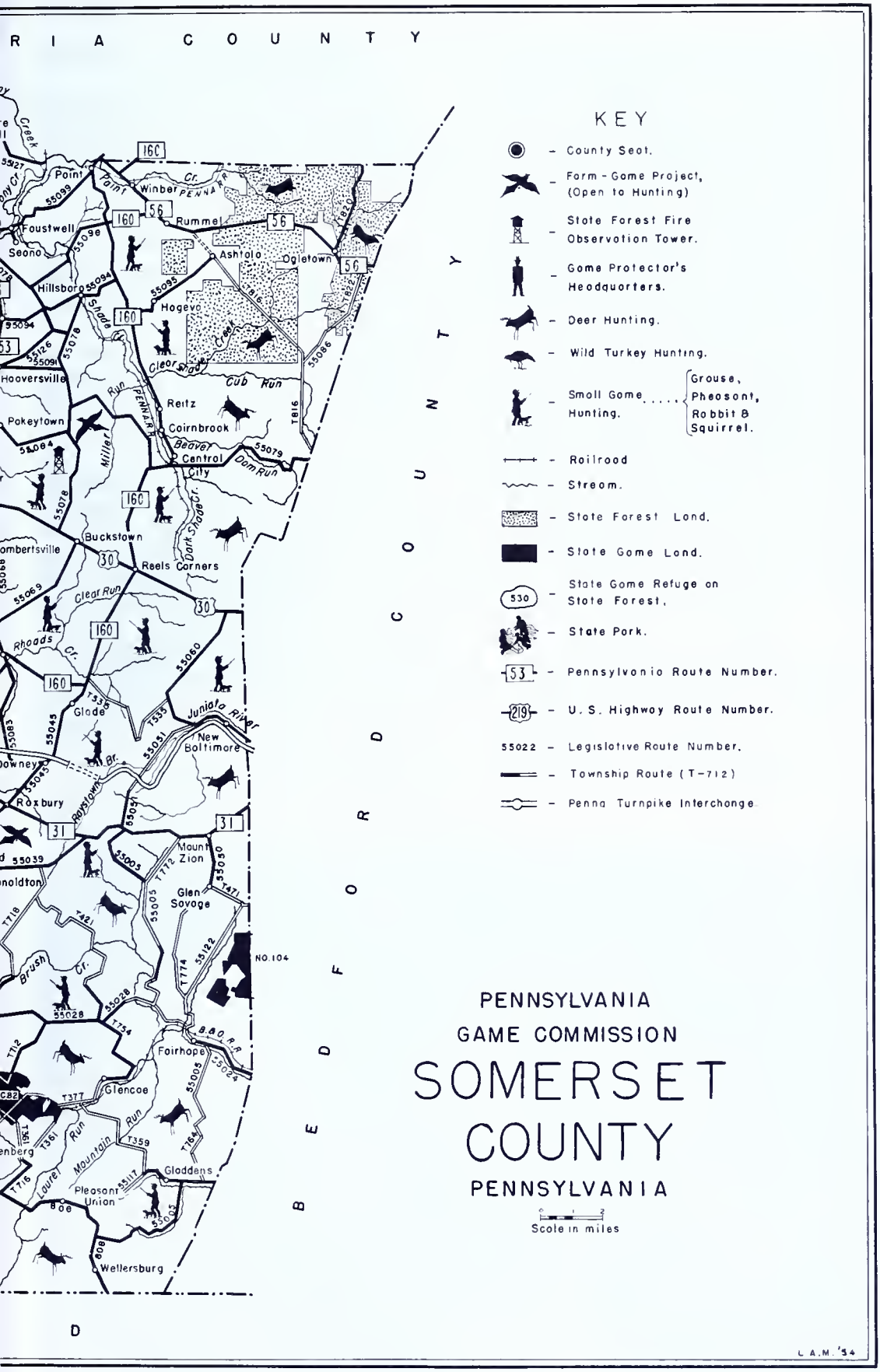
Agriculture

Because of the relatively high altitude, some parts of the county are better adapted for dairying and grazing than for general agriculture. Nevertheless, Somerset County in 1943 ranked third in the State in the value of oats produced, fourth in potatoes, and fifth in buckwheat. The County is also a leader in the production of fine maple syrup.

History

Somerset County was organized in 1795 from Bedford. The earliest military and pioneer trails to the West


BE SURE
IT'S A DEER
BEFORE YOU
SHOOT
WESTMORELAND COUNTY
FAYETTE COUNTY
MARYLA
North Fork Reservoir
So. Fork Bens Cr.
Roaring Run
Jennerstown
Boswell
Ferrellton
Jenners
Gray
Horner Run
Sipesville
Acosta
Harrison
Allenvale
Pennsylvania R.R.
Baer Run
Friedens
Bakersville
Lavonsville
Somerset
Coxes Cr.
Trent
Robert
Murdock
Barronvole
Scullton
New Centerville
New Lexington
Wilson Creek
Rockwood
Blockfield
Kingwood
Schwelbinzville
Middle Creek
Western Maryland R.R.
Casselman River
Buffalo Cr.
Buffalo Bridge
Garrett
Berkley
Meyersdale
Youghiogheny River
Humbert
Draketown
Markleton
Isers Run
Fort Hill
Ursina
Confluence
McClintock Run
Cove Run
Glade Run
Harnedsville
Summit Mills
Shaw Mines
Youghiogheny Dam
Somerfield
Addison
Listonburg
Savage
Whites Cr.
Saint Paul
Coal Run
Boynton
Solisbury
Compton
West Salisbury
Springs
Piney
NO. 111
NO. 50
T455
T449
T320
T328
T391
T314
T369
T446
T387
T336
T378
T333
T586
T675
T548
T312
55066
55147
55064
55049
55052
55044
55048
55120
55038
55034
55033
55030
55021
55029
55022
55024
55027
55023
55019
55008
55006
55136
55010
55002
219
30
31
53
653
601
877
530
40
181
808
1280


R I A C O U N T Y
B E D F O R D C O U N T Y
KEY
County Seat.
Farm - Game Project, (Open to Hunting)
State Forest Fire Observation Tower.
Game Protector's Headquarters.
Deer Hunting.
Wild Turkey Hunting.
Small Game Hunting. Grouse, Pheasant, Rabbit & Squirrel.
Railroad
Stream.
State Forest Land.
State Game Land.
State Game Refuge on State Forest.
State Park.
Pennsylvania Route Number.
U. S. Highway Route Number.
55022 Legislative Route Number.
Township Route (T-712)
Penna Turnpike Interchange
PENNSYLVANIA
GAME COMMISSION
SOMERSET
COUNTY
PENNSYLVANIA
Scale in miles
Hooversville
Pokeytown
Hillsboro
Foustwell
Seono
Point
Winbert
Rummel
Ashtola
Ogletown
Hogeve
Reitz
Cairnbrook
Central City
Buckstown
Reels Corners
Glade
New Baltimore
Roxbury
Mount Zion
Glen Savage
Fairhope
Glencoe
Gladdens
Pleasant Union
Wellersburg
Clear Shade Cr.
Dark Shade Cr.
Cub Run
Dam Run
Miller Run
Rhoads Cr.
Juniata River
Brush Cr.
Laurel Mountain
B.&O. R.R.
NO. 104
L.A.M. '54

passed through the county, beginning with the ill-fated Braddock Expedition against the French at Fort Duquesne. George Washington was responsible for building the first road through the county to make way for an attack upon the French and their Indian allies at the headwaters of the Ohio. A few years later, in 1758, the legions of General John Forbes and Colonel Henry Bouquet marched through the Somerset wildnerness to triumph over the French.

The earliest pioneers came into the county soon after these expeditions had opened paths through the forests. About 1769 a number of settlers made their appearance near present Somerset. The earliest land surveys were made in 1767. The first permanent settler to bring his family to present Somerset village was the famous Quaker, Harmon Husband.

Recreation — Fishing

Fishing waters (name of stream or lake, fish stocked, location and length or area of stocked waters) include:

Trout: Beaver Dam Creek, Stoyestown, Rt. 30, 5 mi.; Beaverdam Run, Boswell, Rt. 601, 3 mi.; S. Fork, Bens Creek, Ferndale, Rt. 219, 5 mi.; Blue Hole Run, New Lexington, Rt. 53, 5 mi.; Brush Creek, Mance, Rt. Junction 55020 & T377, 7 mi.; Clear Run, Bakerville, Rt. 31, 4 mi.; Clear Shade Creek, Windber, Rt. 56, 8 mi.; Drake Run, Confluence, Rt. 53, 3 mi.; Flaugherty Creek, Meyersdale, Rt. 219, 4 mi.; Iser Run, Boynton, Rt. 219, 3 mi.; Juniata River, Raystown Br., New Baltimore, Rt. 31, 5 mi.; Kooser Lake, Bakerville, 5 Acres; Laurel Run, Berlin, Rt. 219, 6 mi.; Laurel Hill Creek, Ursina, Rt. 53, 10 mi.; Piney Run, Central City, Rt. 160, 3 mi.; Roaring Run, Jennertown, Rt. 219, 4 mi.; Sandy Run, Scullton, Rt. 653, 5 mi.; Shafer Run, Bakerville, 4 mi.; Shaffers Run, Fairhope, 4 mi.; Stony Creek, Stoyestown, Rt. 30, 6 mi.; Tub Mill Run, Salisbury, Rt. 219, 4 mi.; Whites Creek, Confluence, 6 mi.; Wills Creek, Mance, Rt. Junction 55020 & T377, 6 mi.

Black Bass: Cranberry Glade Lake, Confluence, 112 Acres; Laurel Hill Creek Dam, Somerset, 55 Acres; Youghiogheny Flood Control Reservoir, Confluence, 1360 Acres.

Recreation — State Parks

Kooser State Park is located northwest of Somerset on State Highway Route 31, and has excellent facilities for swimming, camping and picnicking. Cabins may be rented by the week during June, July, August and September, by the day the rest of the year.

Laurel Hill State Park, an area of 4,026 acres, is located 12 miles southwest of Somerset near the village of Trent. It may be reached over a hard surface road between Highways No. 31 and 653. Camping for organized groups is one of the many features of this park. Opportunities for picnicking, swimming and boating are provided for the general public; an excellent trail system enables hikers to enjoy the whole area.

Mount Davis Natural Monument, located near Haven-of-Rest in the southern part of the county, provides hiking and picnicking facilities at the highest point in Pennsylvania.

Recreation — Hunting

Somerset County provides good deer hunting as well as excellent small game hunting. The county has also improved greatly in recent years as a site for wild turkeys. Seven large Cooperative Farm-Game Projects are located here, totalling 29,457 acres. In addition, four tracts of State Game Lands, open to public hunting, are found as follows: Number 111, near Confluence, totalling 6,891 acres; Number 50, near Somerset, totalling 3,168 acres; Number 82, near Wittenberg, totalling 1,348 acres; and a portion of Number 104, on the Somerset-Bedford County line, totalling 1,018 acres.

WILDLIFE RESEARCH UNIT

. . . *From Page 30*

population held rather constant through 1952. A decrease attributed to poor brood survival reduced the number of birds to 78 in the fall of 1953. The spring breeding population in 1954, however, was comparable to those of previous years.

Experiments to test habitat management techniques have been conducted on the Barrens Area and results for managing grouse habitat. Results, especially brood usage of the managed tract, have been gratifying. Of 15 to 18 broods found on the study2 area each summer since 1950 approximately 80 per cent used the managed portion. We can state from results of this undertaking that cover management for ruffed grouse also affords equal or greater benefits to deer, turkeys and even cottontail rabbits. No forest game species thrives in unbroken forests where the tree canopy excludes sunlight from the forest floor.

Oak Mast Production Studies

A good acorn crop has been recognized by outdoorsmen as a staple fall and winter food for wildlife. Its spotty and inconsistent yield from year to year has been a subject of much conjecture. Late frosts and heavy rainfall during the flowering period and pollen dispersal were factors believed to be limiting the crop. Personnel of the Wildlife Research Unit in 1949 initiated studies on the flowering and fruit development in the various species of oaks. Finding revealed that neither late frosts nor heavy showers were the limiting factors affecting acorn production.

Oaks native to Pennsylvania fall into two groups, namely, the white oaks and the black oaks. Species of white oaks including the chestnut and white oak were found to be poor producers. The red, black, scarlet and scrub oaks, members of the black oak group, have produced quite consistently each season. Since the white and chestnut oak trees are common,

Squirrel studies at Penn State since 1919 have been directed towards habitat and population dynamics. Under excellent habitat conditions, this forest game species does not appear to wander as widely as is generally believed.

Photo by E. P. Haddon, Fish & Wildlife Service



their poor yields tend to give a gloomy overall picture of the mast crop to the casual observer. Good to heavy crops of acorns in the black oaks, on the other hand, have provided our forest game species with nourishing food over the past several winters.

Resulting also from this study was the development of techniques for estimating mast yields and forecasting mast crops on subsequent years. We are now able to predict the red, black and scarlet oak acorn crops a year in advance. Many states in the eastern part of the country have recently shown an interest in the value of such studies. Workers from other regions interested in mast production have come to Pennsylvania to observe our methods.

Squirrel Investigations

Squirrel studies at Penn State since 1949 have been directed towards analyzing squirrel habitats and the habitat and population dynamics; the latter to determine longevity and residence in a particular woodland. Many of the squirrels live-trapped, ear tagged and released on a forested tract in Huntingdon County during 1949 to 1953 were retrapped on the area again in 1954. A few individuals, ear tagged in 1949, were retaken this past spring. These were at least 5-years of age. Out of 94 squirrels taken on this particular area in 1954, 39 or 41.5 per cent were bearing ear tags of previous seasons. The area under study is open to hunting and receives considerable pressure from hunters. Under excellent habitat conditions this forest game species does not appear to wander as widely as is generally believed.

Deer Investigations

A study of deer damage to coniferous plantings was made from June 1951 to June 1952 by the School of Forestry and the Unit to determine the severity of damage and resultant monetary loss. The total loss resulting from deer damage to 938,440 pine, spruce and larch which were planted for purposes other than Christmas trees was $27,838.00, or an average of $29.67 per 1,000 trees planted. Losses to 29,230 pine and spruce planted to produce Christmas trees amounted to $1,079.02, or an average of $36.95 per 1,000 trees planted. Severity of browsing depended on whether the white-tail populations were high, medium or low. Deer damage was also local in that one plantation would suffer severely while only light cropping was inflicted on plantings near by.

The Department of Animal Nutrition cooperating with the Unit is conducting experiments on pen reared buck deer to determine relationship of nutrition to antler growth. Although the study has not progressed to the point where final conclusions can be drawn, it has revealed some facts of interest for the deer hunter. Deer on nutritionally complete rations are large, weighing around 180 pounds, and have racks with 12 to 15 points at the age of 26-months. In contrast, those of the same age on protein deficient diets or those on restricted rations are small in size and have grown only long spikes on very scrubby racks. Abundant nutritionally rich food is a necessity for good antler growth.





Super-Sense of Duty

WESTMORELAND COUNTY—I have been called upon several times to perform duties not exactly in the line of a Game Protector. One instance, I was called by a lady who wanted me to shoot a crippled horse. Recently, I was requested by another lady to please get a large blacksnake out of her attic. However, the snake had other ideas about being removed from its nice, cozy retreat. Every time an attempt was made to remove it, it would scram down the partition. I still haven't heard whether it has finally been caught. The most recent one was from a lady near New Kensington, who requested me to please scare her four- or five-year-old son so that he would stay off the highway. It seems that he did not believe that there was such a thing as a policeman.—District Game Protector D. W. Heacox, Irwin.



Wildcat Scare

ADAMS COUNTY—Last August there was an article published in our local newspaper that there were several wildcats seen roaming around the cottages in the Pine Grove Furnace area. After hearing the report, I was on the alert to try to locate them. A few days later about dusk I spied one of them and shot it. It turned out to be a large wild domestic cat with bobbed tail, weighing over 10 pounds. This cat very much resembled a wildcat and could have been mistaken for one at a distance. The report of wildcats being seen in this resort area caused quite a scare among the summer residents, especially the young folks.—District Game Protector John R. Spahr, Gardners.

Dead Heifer Clears Hunter

CLARION COUNTY—On July 27, I received a call from Mr. Exley of Knox, asking me to come out to his farm to investigate a white faced heifer that he believed had been shot by woodchuck hunters. The carcass was badly bloated and smelling to high heaven when I got there, and had a hole in the chest about the size of a quarter. From all indications the heifer had died the day before the body was found. Upon cutting into the chest cavity I found instead of a bullet, a sharp wooden snag about eighteen inches long by two inches in diameter, that the heifer had evidently run into with considerable force. We were surprised and pleased to find that the hunter had no part in an act that may have caused many acres of land to be closed to public hunting.—District Game Protector Donald M. Schake, Knox.



Look Who Hitchhikes Now

WESTMORELAND COUNTY—Mr. Carns of Rector, R. D., related the following experience to Deputy Frank Baum: On August 16, 1954, while driving his pick-up to work, he heard a commotion in the back of his truck. He stopped quickly and jumped out to see what was making the noise. To his surprise there was a big buck trying to get up on his feet. He finally made it and left for parts unknown. Mr. Carns said he had picked up strange hitchhikers before, but never a deer.—District Game Protector Charles Hertz, Ligonier.

Tyro Trapper Turns Tables

ELK COUNTY—I took time to show a St. Marys sportsman how to treat and set fox traps, going so far as to take him out and set a couple of traps and then kibitzing while he set some. He called a little over a week later and said that he did not catch anything in the traps I set, but had taken five foxes in traps set by himself. I feel well paid.—District Game Protector Vern A. Van Order, Wilcox.

Case of the Guilty Gun

ELK COUNTY—During my law enforcement activities last fall I apprehended three persons attempting to kill a deer by means of an artificial light and a .22 caliber single shot rifle. On the evening of August 21, 1954, I apprehended another person attempting to kill a deer by means of an artificial light in the same field as the above persons attempted to kill a deer last fall. To my amazement it was the same .22 caliber single shot rifle used in both incidents. However, the rifle is temporarily out of order as the last defendent threw the rifle out the auto window when I attempted to stop him and broke off the bolt.—District Game Protector Gerald D. Kirkpatrick, Portland Mills.

Who Won?

HUNTINGDON COUNTY—Mr. Harry Moyer told me of a rattlesnake that he killed last August, while working at Auxiliary Refuge 107. He stated that he heard this snake rattle about 20 or 30 feet from him. Upon investigating, he saw the snake rolling and twisting around. Moyer shot the snake and to his surprise found that the snake had caught a red squirrel. The squirrel had its jaws locked inside the snake's mouth and was holding on to the snake. The squirrel was dead and could not let loose nor could the snake swallow it or spit it out. He stated that they had been there for some time.—Food and Cover Corps Crew Boss, Walter M. Thomas, Huntingdon.

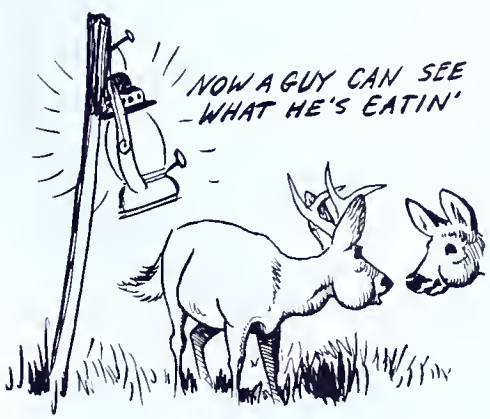


Sportsmen Show How

SUSQUEHANNA COUNTY—Two Susquehanna County sportsmen's clubs are to be commended for their efforts in aiding wildlife. The Canawacta Rod and Gun Club of Susquehanna has purchased and planted various waterfowl foods such as duck millet, potatoes and wild rice. The Susquehanna County Sportsmen's Association of New Milford will give any local farmer five chestnut seedlings if the farmer will buy five himself. This year the club is raising its own seedling stock. Without the help of such unselfish organizations, wildlife would have a much more difficult time in their constant struggle for survival.—District Game Protector Donald G. Day, Susquehanna.

Kerosene Lamps Cuts Loss

CARBON COUNTY—With the deer damage to farm crops on the increase and many methods being used to lessen the damage, one method now used by several farmers seems to work out quite well. That is, to place one or possibly two kerosene lanters on poles in the fields affected. This definitely has cut down the damage and is not too expensive an operation.—District Game Protector William E. Fulmer, Lehighton.





Whistle-pig Likes Lollypop

LEHIGH COUNTY—I had another example of wildlife's taste for sweets, last August when a highway patrolman told me of an unusual sight he witnessed. While patrolling along Route 100, he saw a woodchuck sitting up along the road holding in his paws and eating a lollypop, evidently tossed out of a passing car.—District Game Protector William A. Moyer, Allentown.

No Holds Barred

WAYNE COUNTY—While inspecting day-old chicks raised by cooperators on Farm Game Project No. 170, the following experience was related to me. Sam Chapman, son of a cooperator on the project, told me that he had witnessed a battle between a large black wild house cat and a full grown woodchuck. Sam was at work filling a large silo and from the top of the silo he saw the cat and the chuck going at it with no holds barred. The battle ended in a draw, however, with both contestants running in different directions when they were disturbed by a load of grass coming into the silo.—District Game Protector Robert H. Myers, Honesdale.



Fox Bill of Fare

LAWRENCE COUNTY—Some people no doubt think that the wary fox kills most of the food that he eats, but this is not true. They will eat among other things, berries, cherries, etc., as well as fresh meat or very stale meat. Now and then when I'm very busy trapping fox etc., I kill the animals with bad feet and hold the remainder over night. Recently, I peeled several foxes that I caught in traps because of their injured feet and let the carcasses lay in the pen. In the morning just the bones remain of their slain relatives proving that the fox isn't too choosey about his menu.—District Game Protector Calvin A. Hooper, Jr., New Castle.

Some Snake

CLINTON COUNTY—During August the two sons of Deputy Ed Schmoke killed a large garter snake. Examination of the snake showed that she was carrying 63 young garter snakes by actual count. Each young snake was about four inches long.—District Game Protector Charles F. Keiper, Renovo.

Gobbling Grouse

McKEAN COUNTY—Earl Grinolds, Crosby, Pa., a gas lease foreman tells of seeing an old grouse and brood from time to time this summer. About a month ago he observed a young turkey with them and has seen them all together two to three times a week since that time. Evidently the old grouse has adopted the young turkey.—District Game Protector William H. Shirey, Smethport.

Dry Summer for Wildlife

YORK COUNTY—This spring and summer, I have received more damage complaints than ever before. The complaints have been on fox, raccoon, mink, pheasants, crows, squirrels, muskrats, deer, dogs, cats and woodchucks. The complaints on rabbits, woodchucks, muskrats and raccoons have been most numerous. One rather odd complaint on woodchucks was that they were climbing peach trees and eating all the peaches. I believe that many of the complaints have been caused because of the dry weather—the animals and birds seem to be seeking moisture.—District Game Protector Earl E. Geesaman, York.



Nuts to Wildlife

By Ward M. Sharp

and Jess W. Malcolm



PGC Photo by Ralph Cady

Gray squirrels have the will and strength to cut hickory nut shells to pieces.

AUTUMN days are hoarding days for many ambitious squirrels and wild mice. Increased activity calls forth increased appetites in these rodents. Indian summer days and autumn colors foretell the approach of winter and the necessity of laying on a store of belly fat. Each species, whether it be a gray, red or flying squirrel, a chipmunk or a white-footed mouse, in order to crunch the tasty morsels, gnaws through the shells of freshly fallen nuts in a distinctive manner.

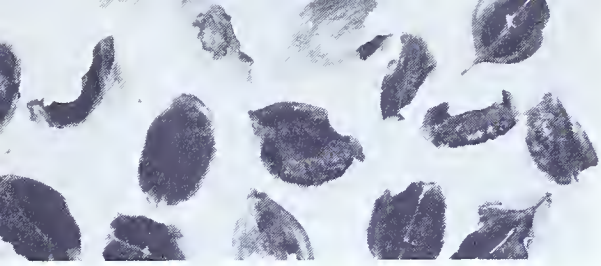
The pictures on these pages present a glimpse of some of these mannerisms. Gray squirrels have the will and strength to cut hickory nut shells to pieces. The other squirrels gnaw a hole in the shell and work out the kernels, but the white-footed mice don't have the power to open these nuts.



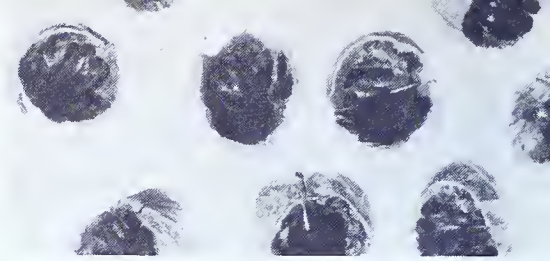
Shagbark Hickory

How do we know that the signs depicted in these photographs are authentic? The Pennsylvania Cooperative Wildlife Research Unit used caged animals in utilization experiments. Our objective was to identify through tests the gnawing on nut shells found in the forest. These animals were observed over a period of time and their characteristic methods of shell cracking did not vary greatly.

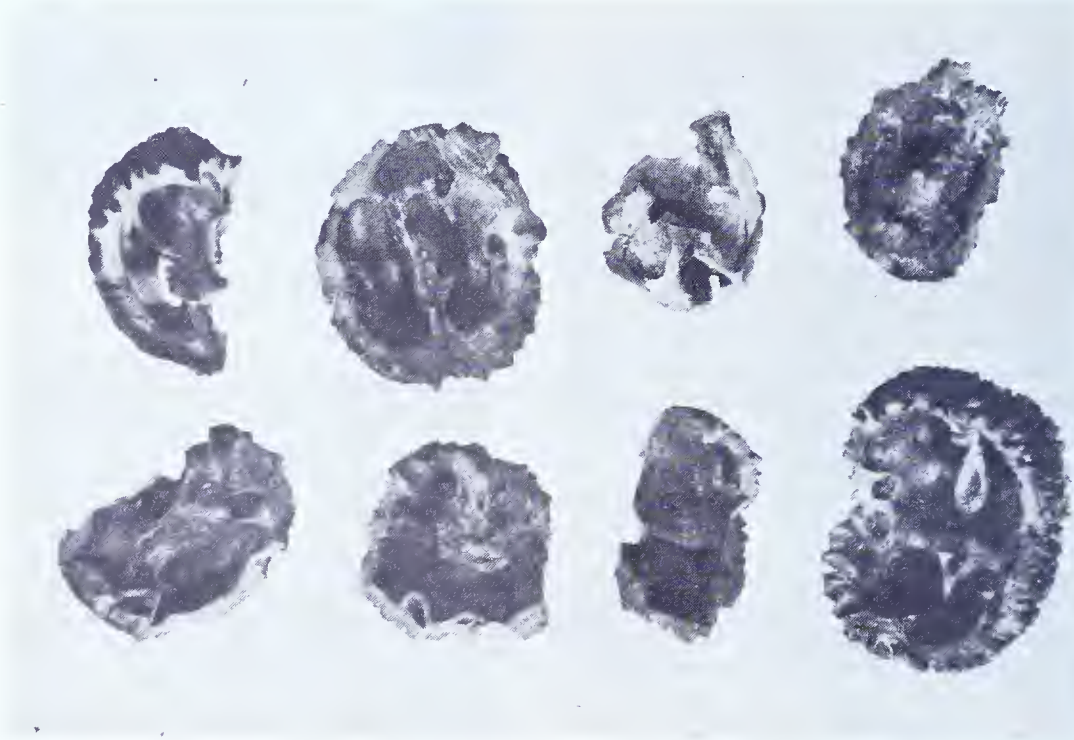
No other group of wildlife species makes a greater inroad on the acorns produced each season than do squirrels, chipmunks and wild mice. Their autumn hoarding in inaccessible caches, in addition to the nuts eaten, tends to eliminate the available supply. Forest game, grouse and turkeys in particular, so dependent on available acorns may go wanting due to this rodent activity even though a good crop is produced on the trees.



GRAY SQUIRREL METHOD OF FEEDING ON HICKORY NUTS. Cuttings left by gray squirrels when feeding on hickory nuts have a characteristic appearance. The shell is chipped into several pieces in removing the kernels.



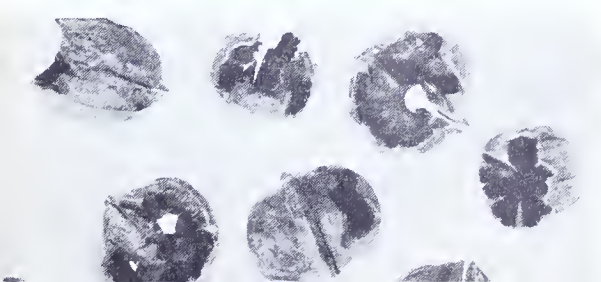
FLYING SQUIRREL METHOD OF FEEDING ON HICKORY NUTS. Gnawings on hickory nuts by flying squirrels are difficult to separate from the sign made by chipmunks. Since the flying squirrel feeds in trees, empty hickory nut shells with the ends removed are more commonly found at the bases of trees or in cavities in the trunk. A knowledge of the habits of both, and the location of such work, is ordinarily a clue to identification.



GRAY SQUIRREL METHOD OF FEEDING ON WALNUTS. Gray squirrels literally cut the heavy shell of the black walnut apart piece by piece. Fox squirrels would leave a similar sign on walnuts and hickory nuts, but the latter are not generally common over Pennsylvania. Any walnut shells found gnawed into pieces are quite likely the work of a gray squirrel.

RED SQUIRREL METHOD OF FEEDING ON HICKORY NUTS. Red squirrels commonly gnaw a hole in each side of the hickory nut and remove the kernels. Sometimes the basal end of the nut is eaten off, but nuts with the sides removed occur in greater frequency among shell remains.

CHIPMUNK METHOD OF FEEDING ON HICKORY NUTS. When you find empty hickory nuts with a hole gnawed in the end of the shell, indications are a chipmunk has left its mark. Such shell remains found among fallen tree trunks, fencerows or rocks are usually those left by this small rodent.







RED AND FLYING SQUIRREL, OR CHIPMUNK METHOD OF FEEDING ON ACORNS. It is difficult to determine whether acorn fragments are the result of feeding by red or flying squirrels or the chipmunk. Feeding characteristics of all three are similar. The acorn hull is finely shredded into numerous small pieces by these rodents.

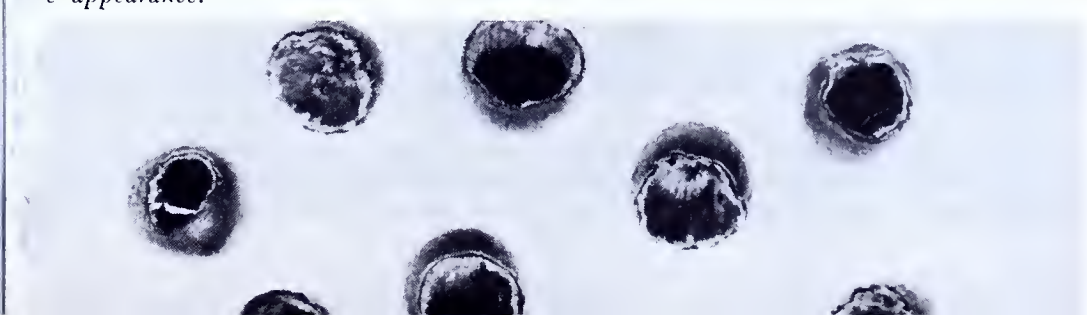


GRAY SQUIRREL METHOD OF FEEDING ON ACORNS. Gray squirrels habitually remove the shells of acorns in sizeable pieces. The hulls may be halved or broken into three or four pieces. Experienced squirrel hunters look for this sign on logs, stumps or at the base of trees. When an abundance of fresh acorn hulls are found at a forest site, be on the lookout for a squirrel.



RED SQUIRREL METHOD OF FEEDING ON BLACK WALNUTS. Red squirrels have characteristic marks on walnuts. A hole is gnawed through the shell on the sides opposite each kernel. No other rodent spells its name more legibly in sign language than does the red squirrel on empty walnut shells.

WHITE-FOOTED MOUSE METHOD OF FEEDING ON ACORNS. The white-footed or wood mouse, also called the deer mouse, leaves a telltale sign on all acorns eaten. This little rodent, abundant in our wooded areas, gnaws away the soft basal area of the acorn and removes the meat through the hole. Its small head and pointed nose is just the right size to reach inside the shell. The discarded empty hull presents a thimble-like appearance.





OUTDOOR FUN WITH A FUTURE



Look for Wildlife Near Its Food Supply

By Mary S. Pettit

HOW many times have you tried to get in touch with someone during odd hours of the day or evening, only to be told: "Call at dinnertime. He's always home then." Sure enough, you call at mealtime, and you get your man.

Wild animals are creatures of habit, as is man. They have certain food preferences, and places where they eat, just as you have a dining room or dinette in your home and certain kinds of breakfast cereal or dessert that you like best. For best success in finding animals, you should know something about what they like to eat, and their feeding times. "Look for them at dinner time, and you'll find them home."

The first few times in my life when I went grouse hunting, I wasn't very successful. I'd "boot out" an occasional bird, but in the course of the season I didn't get many shots. I thought I knew good grouse cover when I saw it, and I did know that the wildlife biologists had said that grouse then were at a high point in their population cycle. Still, I did not see many birds.

Then I had the good fortune to go out with an old timer. In one day we flushed more birds than I had seen all the previous season. Interestingly enough too, we hunted in the same general area I had hunted before. The difference was in where we hunted in that general area.

The area in which we were hunting was one of abandoned farms. In the twenty or thirty years since the land had been farmed, brush had grown up in the apple orchards until the fruit trees were completely surrounded and many of them topped by spruces, aspens and maples. But the apple trees still bore some fruit, and in the early part of the season those old orchards were the dining room for grouse.

Later in the season the birds moved to denser cover for more protection from the snow and cold and moved out during the day to feed on wild grape, dogwood and other fruits. Knowing what the birds ate helped me find them. It was easier to look for food patches first than it was to wander aimlessly looking for birds.

Wherever you live you can find out for yourself what kinds of food birds prefer and at about what time they feed. The easiest way is to set up feeding stations in your back yard in a nearby park or along the edge

of the woods or field not too far from home. You'll be amazed at the number and variety of birds that will come to feeders during the winter. Usually while they are feeding, these birds will be relatively tame and you will have the opportunity to watch them closely and get to know them quite well.

Perhaps you have already tried to attract birds to your window sill without too much success. English sparrows and starlings may be steady customers, but how about other birds? Cardinals, chickadees, song sparrows, nuthatches, woodpeckers and grosbeaks are all around in winter but may be a little timid about approaching too close to the house. Here's a stunt that has worked successfully in many places.

First you'll need two pulleys and a long piece of clothesline. Fasten one pulley on the house and one on a tree or pole some distance from the house. Make a feeding tray as shown in the illustration, fasten it on the clothesline, and string the clothesline around the pulleys. Another way to do it would be to fasten two small pulleys on the top of the feeder, and run the line through these pulleys. Then the feeder would slide along on the rope.

But whichever way you do it, start with the feeder some distance from the house. Stock it with a good selection of feed. Sunflower seeds, ground up raw peanuts, raisins, a few whole peanuts, cracked corn, millet, crushed cookies, and suet are all good. When birds become used to feeding on the tray, move it a little closer to the house. A few days later move it a few feet closer. By the end of two or three weeks you should have birds feeding close to the house where you can watch them from the inside, where they cannot see you, but where you can study them and see what they eat.

There are many other kinds of feeders that are all good ones, and

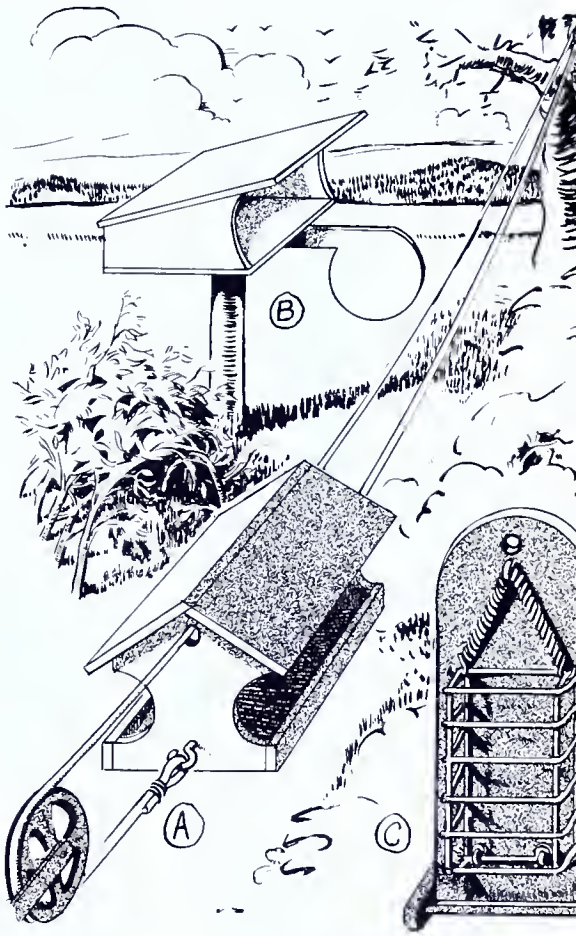
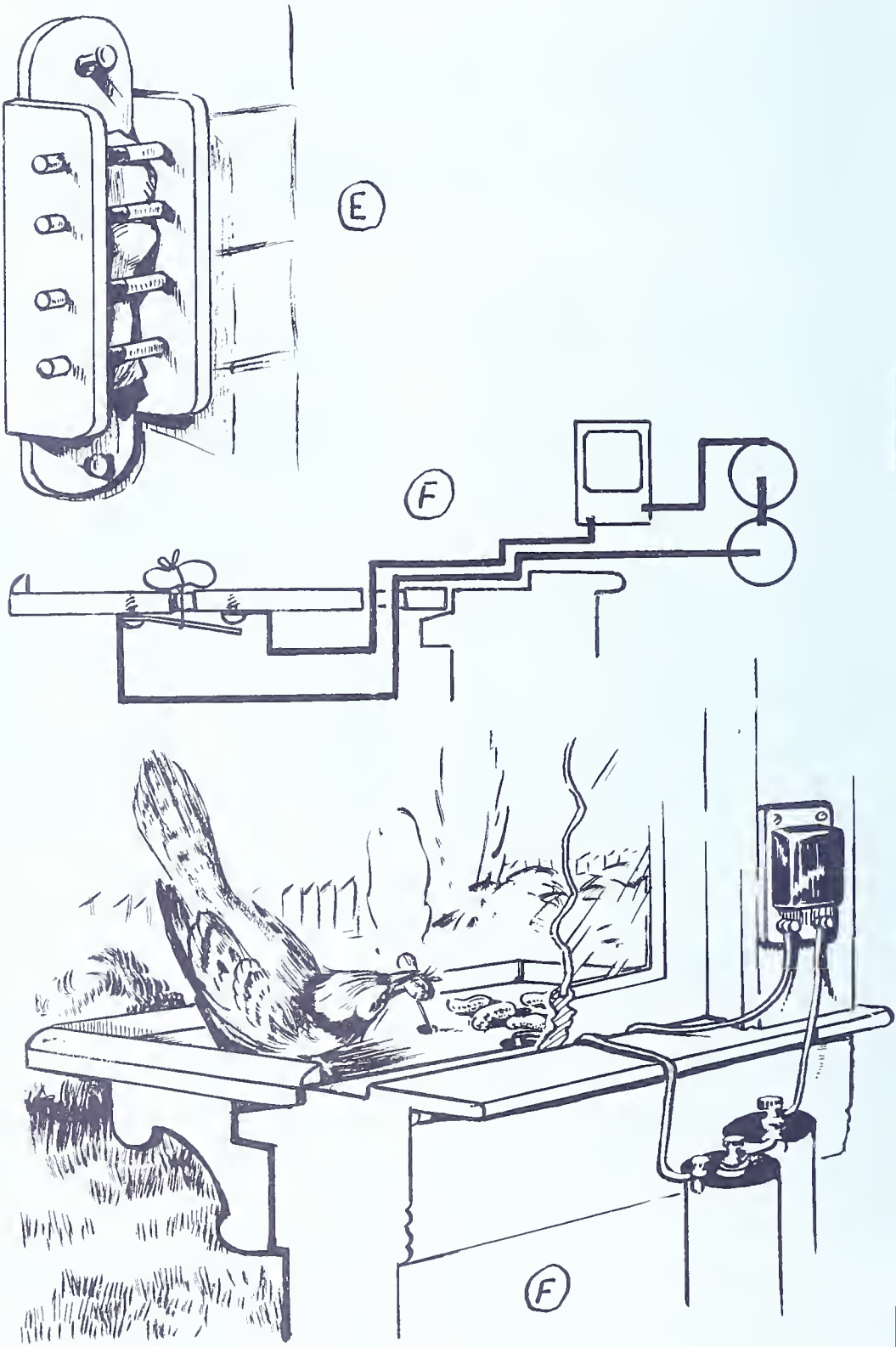


Illustration from "Birds In Your Backyard," by Ted Pettit, published by Harper and Brothers, New York, N. Y.

which will attract birds if they are kept stacked with food. The drawings show a weathervane feeder (B) which turns with the wind so the birds are protected as they feed; a soap dish suet rack (C) which will attract woodpeckers, nuthatches and brown creepers; a wooden suet rack (E); and a glass enclosed window sill feeder (D). This feeder is a good all around contraption since it protects food from rain, snow or wind and birds may find food any time. On top of that, it is easy to fill from within the house on a cold day.

Since in the beginning birds will not be accustomed to finding food at your feeder, and will come to it



Illustrated from "Birds In Your Backyard," by Ted Pettit, published by Harper and Brothers, New York, N. Y.

at odd times, maybe you will want to rig up an alarm system so you will know when they are there. Then when they come to feed, a bell will ring and let you know it's time to watch birds.

To rig up this "bird bell" you will need a small coil of bell wire, a door bell, two dry cell batteries, a short piece of sheet copper, and a window feeder. Here's how you do it: connect the negative pole of battery #1 to the positive pole of battery #2 with a piece of wire. Connect one pole of the door bell to the negative pole of battery #2. Run a piece of wire from the other pole of the door bell to one pole of the trigger. Run a piece of wire from the positive pole of battery #1 to the other pole of the trigger.

To make the trigger, drill a ¼" hole in the bottom of the feeder, about an inch from the hole fasten a piece of sheet copper (or other metal) ½" x 3" with a wood screw through one end so that the metal covers the hole in the board. This screw is one pole of the trigger. Bend the other end of metal away from the board so there is one half inch gap. At the point where the metal strip would touch the board, screw in a round-headed wood screw. This screw is the second pole of the trigger. Tie one end of a short piece of string or nylon thread around the metal strip securely, and push the other end up through the hole. Tie the other end to a peanut or other bit of food.

Now, when a bird picks up the food, it will pull the string, and the metal strip will make contact and ring the bell. The illustration shows how to do it.

Once you get birds to feed in your yard, there is another experiment you can try to find out what they like to eat. Get a piece of board about three feet long, a foot wide and an inch thick. Drill about a dozen holes an inch in diameter through the board. Get some small paper cups (or make some small cups out of aluminum foil), that will fit in the holes. Fasten the board on your window sill, on a post or on a tree. Put a different kind of seed in each cup, but keep a written record of which kind of seed you put in each cup. Then watch and see which cup is empty first. If you watch the birds that come to feed you can quickly find what kinds of birds prefer which kinds of seeds.

Some of the foods to try are: sunflower seeds, ground peanuts, other nut meats, peanut butter, millet, wheat, sorghum, cracked corn, hemp, kafir corn, raisins, small bits of fruit such as apples, or wild fruits such as dogwood, elderberry and viburnum. Most of the seeds can be obtained at garden supply or feed stores, but the wild foods you will have to collect yourself. You'll have an interesting time finding out what birds prefer to eat—and then you can provide that kind of food to attract the kinds of birds you want in your yard.

So far, we have talked only about song birds. But how about game birds? Can you feed pheasants and quail too? The answer of course, is that you can, but in a different way. Those birds feed on the ground, normally, so that a different kind of feeder is necessary.

Feeders for game birds usually are built in the shape of a small lean-to, with the back facing into the direction of the storm winds. Build a frame of small poles about three feet high, four feet wide and four feet long, then cover the frame with boughs or grass to provide protection from wind and snow. Place corn and other seeds on the ground under the lean-to.

The place where you build the shelter is important. It should be placed near cover such as a fence row, dense clump of pines or spruce, or a tangle of brush, catbrier, honeysuckle or other cover where the birds

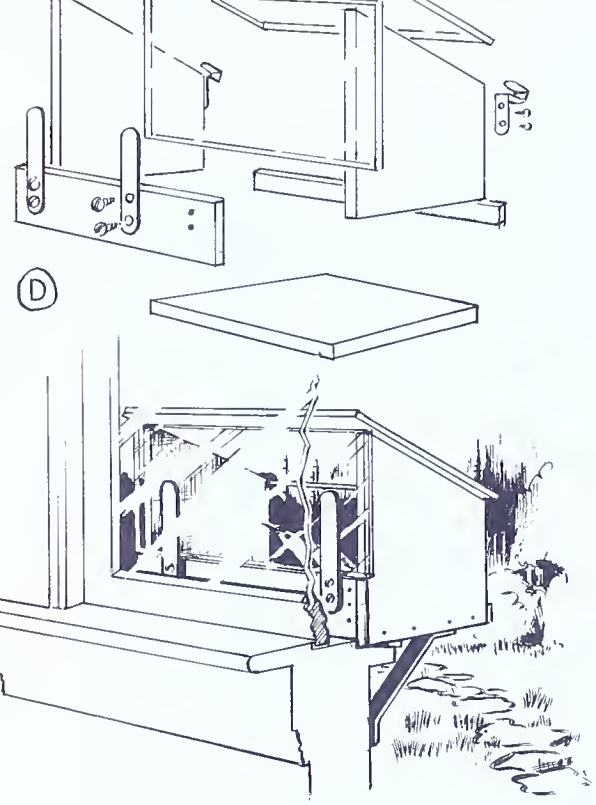


Illustration from "Birds In Your Backyard," by Ted Pettit, published by Harper and Brothers, New York, N. Y.

may escape their enemies. Otherwise the feeder may become a deathtrap as well as a feeder.

Anyone who has fed large numbers of birds in the yard for any length of time probably has made one discovery. Along with the song birds they attract cats and hawks. Cats and hawks soon find a good source of food at feeding trays in the song birds that come there to feed.

In nature, birds do not usually feed in large flocks in the open as they do at backyard feeding stations. Neither do they feed in the same place at about the same time every day. The unnatural situation created by the feeders—whether for song birds or game birds—attracts predators, who like the other birds look for an easy source of food.

This is one reason why some conservationists question whether bird feeding is really good conservation or not. It's true that under some circumstances, such as severe ice or heavy snow storms, birds might not be able to get food if it were not provided for them. But under normal circumstances birds seem to be able to find natural food and in so doing are able to avoid the predators that may wait for them at artificial feeding stations. However, bird feeding is fun, and it is a means of learning about birds and finding out about some of their habits. Whether it is important as a conservation project is another point.

Finding out what kinds of food birds prefer in nature provides a clue to a very important part of wildlife management—providing more of those food plants is one part of the job of increasing the number of certain game birds.

Wildlife technicians find out what kinds of foods birds eat both by observation and by examining the stomach contents of dead birds. They have found for example, that bunchberry, wild grape, partridgeberry, wintergreen, elder, hawthorne, dogwoods, viburnums and cultivated fruit trees all provide fruit that is eaten by grouse. Thus in some places, where conditions are suitable for grouse, large numbers of some of these plants are set out each year.

It has been found that some of the plants that provide desirable food will grow naturally if conditions are suitable. Thus in some places, small areas of dense woods are clear cut and the soil turned over. The added light and the disturbed soil, enable such plants as blackberry, raspberry, elderberry and sumac to get started, which provide food for several years until the trees come back and again shade them out.

Quail and pheasants, in the same way, have wild foods which they prefer. If you know where these food plants grow in quail or pheasant range, you will have a better chance of finding these birds the next time you go hunting.

While birds generally eat a variety of foods, squirrels are more partic

ular. You rarely find squirrels in any abundance except in woods composed of trees that bear nuts. Back in the days before the chestnut blight, chestnuts probably formed the major part of the diet of squirrels during a large part of the year. Now oaks, hickories and beech trees supply important food. During the hunting season, therefore, one hunts in woods where there are large numbers of these trees. Of course, food alone is not enough. Animals need cover and places to make their nests or dens. But the easiest way to find squirrels is to look for an oak woods first.

Many animals travel around and feed at night, so even if you know what they eat, looking for them in the day time will not prove too successful. But looking for tracks along streams or rivers will reveal their presence, even if you do not see them.

Usually the most successful sportsmen are those who know the habits of the game they hunt. An important part of knowing the habits, is knowing what kinds of natural food animals eat. Whether you hunt with shotgun or rifle, camera or binoculars you will have more fun and more success if you "call them at mealtime. They're usually home then."

WHO NEEDS A HUNTING LICENSE?

Occasionally someone asks whether it is necessary to buy a hunting license to lawfully hunt foxes, crows, certain hawks, or other unprotected species. The game law requires, generally, that persons who wish to take wild birds or animals of any description in Pennsylvania, either by hunting or trapping, must own and wear a hunting license for the current period.

The law provides these three exceptions:

1. Any citizen residing upon and regularly and continuously cultivating lands in Pennsylvania for general farm purposes, truck growing, orchards or nurseries, operated on a commercial basis, may hunt or trap thereon without license. Under the above conditions, such person may also hunt or trap upon lands connecting with his own, other than those publicly-owned, without a hunter's license after obtaining written consent from the owner or lessee.

2. Resident disabled war veterans with the loss of one or more limbs or the loss of the use of one or more limbs, if service incurred, may receive a free hunter's license from any county treasurer.

3. Residents under 18 years of age may trap fur-bearing animals (except beavers) and predators without a hunter's license, but they must have a license to trap raccoons, which are game animals, and beavers.

CONSERVATION NEWS

Sportsmen and Conservation Agencies Commemorate First State Game Refuge

On October 16th, a historic marker was unveiled in Clinton County at the site of Pennsylvania's first Primary State Game Refuge. The sanctuary was known as the Penrose Refuge in honor of Dr. C. B. Penrose, President of the Pennsylvania Game Commission at the time the closed area was established. The refuge is located 12 miles south of Renovo along the Snowshoe-Renovo Road on the Sproul State Forest, a holding of the Department of Forests and Waters.

The Western Clinton Sportsmen's Association of Renovo provided the inspiration for the monument and dedication. The Clinton County Sportsmen's Federation, the Department of Forests and Waters and the Game Commission combined with them to make the event specially significant, particularly since it did occur during "Pennsylvania Week."

A well-shaped, natural stone was obtained in the locality by the Department of Forests and Waters and transported to the commemoration spot. The Western Clinton County Sportsmen's Association represented the county group in supplying the concrete base, installing the stone and embedding the plaque. A suitably engraved bronze plaque, 16 by 26 inches, was provided by the Game Commission. It gives the dates of the sanctuary's existence, 1905-1946, and credits sponsorship of the memorial to the three organizations.

Participating in ceremonies which dedicated the memorial marker at the site of the first game refuge in Pennsylvania were, left to right: Commissioner Andrew C. Long, Shamokin; Commissioner Tom McDowell, Bradford; H. M. B. Weicksel, Renovo, president of the Western Clinton County Sportsmen's Association; Dr. Logan J. Bennett, executive director; Commissioner Louis S. Winner, vice president of the Fish Commission; and Charles Hogeland, regional director of the Department of Forests and Waters.

Photo by Dempsey, Renovo



Pennsylvania Game Commission
RESIDENT AND NON-RESIDENT HUNTERS' LICENSES ISSUED BY COUNTY

COUNTIES	RESIDENT				NON-RESIDENT	
	1952	D.V.	1953	D.V.	1952	1953
Adams	5,595	(1)	6,163	(1)	395	406
Allegheny	62,299	(38)	66,905	(37)	184	176
Armstrong	12,742	(8)	13,306	(7)	106	134
Beaver	14,226	(15)	15,004	(14)	326	285
Bedford	7,920	(8)	8,087	(7)	370	458
Berks	22,376	(15)	23,309	(15)	49	51
Blair	15,811	(16)	16,257	(14)	180	168
Bradford	8,906	(5)	8,747	(7)	610	589
Bucks	11,115	(4)	13,250	(9)	845	859
Butler	13,909	(8)	13,854	(7)	137	148
Cambria	21,732	(17)	22,712	(17)	169	178
Cameron	1,902	(6)	2,168	(1)	521	327
Carbon	6,342	(3)	6,358	(8)	73	77
Centre	11,778	(14)	11,837	(9)	244	194
Chester	13,997	(6)	14,737	(9)	481	509
Clarion	8,427	(8)	8,413	(9)	471	502
Clearfield	14,900	(11)	15,604	(15)	658	689
Clinton	7,750	(10)	7,652	(12)	189	165
Columbia	8,337	(3)	8,569	(2)	84	98
Crawford	13,385	(16)	14,099	(16)	629	712
Cumberland	13,709	(8)	14,320	(3)	37	38
Dauphin	18,962	(16)	19,966	(22)	141	153
Delaware	12,520	(9)	13,057	(9)	143	161
Elk	6,746	(3)	6,637	(3)	504	454
Erie	23,281	(13)	24,377	(12)	836	812
Fayette	17,731	(33)	18,770	(23)	163	191
Forest	2,328	(3)	2,299	(3)	679	628
Franklin	11,013	(2)	11,459	(2)	373	433
Fulton	2,521	(4)	2,555	(5)	125	160
Greene	4,447	(7)	5,042	(6)	102	121
Huntingdon	7,503	(14)	7,620	(13)	215	200
Indiana	11,714	(12)	11,055	(13)	296	317
Jefferson	10,537	(14)	10,144	(12)	1,199	971
Juniata	3,063	(5)	3,122	(4)	43	52
Lackawanna	14,242	(21)	14,371	(24)	192	219
Lancaster	27,142	(12)	28,792	(9)	122	137
Lawrence	11,294	(11)	11,740	(12)	1,154	1,249
Lebanon	10,284	(12)	10,290	(12)	47	45
Lehigh	12,802	(11)	12,964	(11)	74	66
Luzerne	27,664	(17)	28,373	(24)	448	493
Lycoming	15,947	(15)	16,013	(14)	302	293
McKean	10,242	(4)	10,378	(9)	1,568	1,316
Mercer	14,705	(5)	15,723	(6)	2,052	2,291
Mifflin	7,634	(7)	7,763	(6)	159	156
Monroe	6,141	(5)	6,448	(5)	662	602
Montgomery	21,957	(6)	22,590	(10)	74	47
Montour	2,120	(2)	2,247	(2)	9	9
Northampton	15,511	(1)	16,272	(7)	641	579
Northumberland	12,960	(7)	13,466	(5)	43	64
Perry	4,795	(3)	4,952	(2)	41	46
Philadelphia	22,705	(12)	22,809	(9)	689	592
Pike	2,163	(1)	2,538	(4)	1,731	1,903
Potter	4,122	(4)	4,223	(8)	1,520	1,047
Schuylkill	19,225	(18)	19,368	(14)	50	68
Snyder	3,852	(4)	4,000	(3)	30	27
Somerset	13,226	(18)	12,929	(16)	397	337
Sullivan	1,801	(3)	1,651	(4)	92	88
Susquehanna	5,151	(1)	5,354	(2)	383	342
Tioga	7,297	(6)	7,359	(8)	869	685
Union	3,934	(5)	3,824	(6)	46	57
Venango	10,127	(8)	10,376	(8)	826	917
Warren	7,407	(10)	7,293	(9)	1,622	1,491
Washington	18,534	(11)	19,340	(10)	482	488
Wayne	5,297	(8)	5,146	(8)	624	692
Westmoreland	34,024	(19)	34,786	(22)	273	196
Wyoming	3,292	(2)	3,225	(1)	74	119
York	22,524	(8)	24,658	(10)	446	436
Dept. of Revenue	1,134	(..)	1,068	(..)	2,723*	2,151*
Totals	830,779	(632)**	859,783	(646)**	32,042*	30,664*

* Includes Alien Non-Resident Hunters' Licenses as follows: 1952, 3; 1953, 7.

** The figures in parenthesis indicate "Free Licenses" issued to Resident Disabled War Veterans, which are included in column of "Resident Licenses."



Photo by C. Paul Blair

New officers of the Pennsylvania Federation of Sportsmen's Clubs, elected at the organization's annual meeting in Harrisburg on September 18, are, left to right: Steve Emmanuel, of Wilkes-Barre, first vice-president; Joseph H. Barkley, the Federation's past president; Charles H. Nehf, of Allentown, secretary; Ray H. Armstrong, of Guys Mills, Crawford County, president; and Glen C. Dodds, of Smiths Ferry, Beaver County, treasurer.

Small Marsh Program Started In Pennsylvania

The Game Commission has started a program in which small marsh impoundments are being established on State Game Lands and other publicly-owned holdings in northwestern Pennsylvania. Since last October, 37 sites have been surveyed. Of these 24 were considered generally acceptable, and plans for the construction of dams on them have been drawn.

Four structures have been completed to date. Three more should be finished before summer's end. These seven dams will be filled with water as soon as permanent sod has been established on the banks and emergency spillways.

The 7 ponds mentioned above cover approximately 65 acres. They are located on State Game Lands in Elk County and on Allegheny National Forest lands adjacent. One or two more impoundments will be built in the same area next spring. When these are completed the project will move to State Game Lands No. 69, Crawford County. Plans call for the construction of some 15 dams on suitable sites already located there.

The small marsh dams are being built in groups of 3 or more. The object is to establish chains of these water areas along the flight lines of wild waterfowl. When ducks take off from one pond they will "set down" on another nearby, instead of taking off for distant points. These water areas will afford home-seeking pairs encouragement to stop over in Pennsylvania and raise broods for our sportsmen. Extending the time the waterfowl will stay in the area will also receive the approval of duck hunters.

Game Lands Timber Sales Benefit Wildlife

In the Game Commission's fiscal year ending May 31, 1954, the sale of wood products from State Game Lands totaled $51,827.73. Such sales were for saw timber, mine timber, paper and chemical wood, posts and mine props, and firewood.

Monies so received are deposited in the Game Fund. They will be of use in carrying on plantings and other operations in the interest of our wildlife. The principal value of these cuttings and thinnings, however, results from openings made in the forest canopy. They allow sunlight to reach the forest floor and permit the growth of low vegetation, which is valuable as food and cover for wildlife.

Thus, in this management practice one renewable resource, timber, is harvested to the benefit of another, wildlife.

In Memoriam

Pennsylvania lost one of its outstanding conservationists with the recent passing of William H. Everman, veteran Delaware County outdoor writer. Bill was motivated throughout his entire life with an all-consuming ambition—to improve Pennsylvania's hunting and fishing and to improve it for future generations. He wrote for the "Chester Times" and "Delaware County Sport Week," helped organize the Delaware County Field and Stream Association and served as its first president, and was also very active in the Brotherhood of the Jungle Cock. Although now departed, Bill Everman has left a fine tradition for future sportsmen to follow.

At the annual fall dinner meeting held in Harrisburg on September 18, the Pennsylvania Outdoor Writers Association elected officers, shown above, left to right, as follows: Shorty Manning, Chester County, treasurer; Jack Richards, Pottsville, re-elected president; Dr. Alvin Grove, State College, vice-president; Mrs. Ellen Dietrich, of Upper Darby, secretary; and Bob Reed, of Harrisburg, director.

Photo by C. Paul Blair



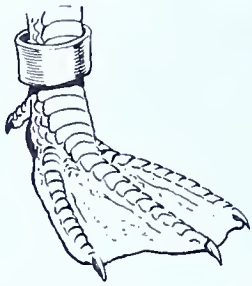
HUNTERS ATTENTION!

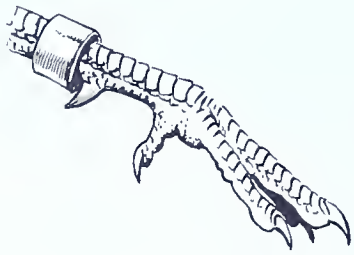




PLEASE HELP US MAKE BETTER HUNTING FOR YOU!

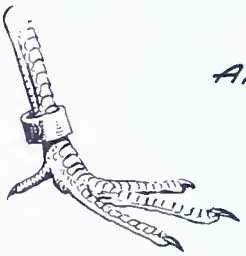
WE BANDED THE WILD DUCKS WE RELEASED —



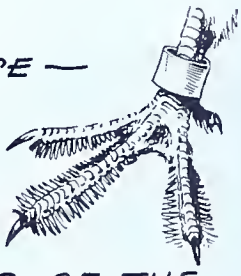


AND SOME RINGNECKS —

WE LIVE-TRAPPED AND BANDED A BUNCH OF WOODCOCK —



AND A FEW GROUSE —



AND WE TAGGED THOUSANDS OF THE RABBITS WE LIVE-TRAPPED AND MOVED INTO OPEN HUNTING TERRITORY LAST YEAR—



WE SPENT YOUR MONEY DOING THIS BECAUSE

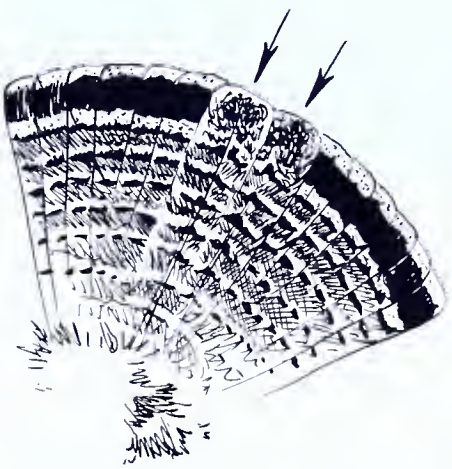
IT IS THE BEST WAY OF FINDING OUT MANY THINGS- HOW LONG THEY LIVE, HOW FAR THEY TRAVEL AND WHERE THEY GO, HOW MANY ARE KILLED BY HUNTERS DURING THE SEASON, WHEN AND WHERE THEY SHOULD BE RELEASED, AT WHAT AGE SURVIVAL IS BEST, AND MANY OTHER FACTS.



THIS INFORMATION CAN MEAN BETTER HUNTING FOR YOU, AND WILL IF YOU SEND IN YOUR BANDS AND TAGS. DO IT THE SAME DAY YOU GET ONE.

ONE MORE THING!

WE WOULD LIKE TO HAVE THE GROUSE HUNTERS SEND IN THE WING TIP AND TWO CENTRAL TAIL FEATHERS AGAIN.





THIS WAY WE CAN KEEP ABREAST OF THE GROUSE CYCLE AND DETERMINE HOW SUCCESSFUL THE HATCH WAS THIS PAST SPRING, AND HOW WELL THE YOUNG BIRDS LIVED.

BAGS, TAGS, OR FEATHERS CAN BE HANDED TO YOUR LOCAL GAME PROTECTOR OR SENT DIRECTLY TO:

WILDLIFE RESEARCH DIVISION
PENNSYLVANIA GAME COMMISSION
HARRISBURG, PENNSYLVANIA

NED SMITH



PGC Photo by Don Miller

John F. Shoffstall, of Lancaster, with foxes he took last winter in Elizabeth, Manheim and Martic townships. Shoffstall is employed at Armstrong Cork Company and has several odd jobs on the side. His hunting is done mostly on weekends.

Value of Marshlands to be Theme of National Conservation Essay Contest

The value of marshlands has been selected as the subject for the 1954-55 conservation essay contest, sponsored by the National Wildlife Federation and its state affiliates. National winners are selected from among the winners in state contests conducted by state federations for junior and senior high school students. This winter, junior high students will write on the subject, "What Good is a Marsh?" while senior high students will answer the question, "Why Save Our Marshlands?" The two topics were chosen to relate to the theme of the 1955 National Wildlife Week, "Wetlands Are Worth Saving."

According to Robert C. Yake, of East Lansdowne, chairman of the Pennsylvania Federation of Sportsmen's Clubs conservation education committee, five Keystone State students won prizes in last year's contest.

Entries in the national contest must be made prior to February 1, 1955. Three winners in both the Junior High and Senior High divisions of the state contest will be entered for prizes totalling $700. Interested students and teachers are urged to contact Mr. Yake, 904 E. Pembrook Avenue, East Lansdowne, for further details of the contest.

Found Any Duck Decoys?

Soon after the 1954 waterfowl season opened on the Susquehanna and other waterways of Pennsylvania, sudden flood waters carried hundreds of duck decoys downstream. If you found any of these decoys, make every effort to return them to their rightful owners. Most decoys are marked with some sort of name tag. Don't be accused of larceny. Do show real sportsmanship—return those decoys!

Wally Taber to Appear in Philadelphia Area This Fall

Wally Taber, well-known sportsman-lecturer from Denver, Colorado, is scheduled to make a series of personal appearances in the Philadelphia area during November and the early part of December. Taber, whose African safari movies and talks thrilled thousands of Pennsylvanians last winter during a statewide tour, will again present his colorful program under the auspices of the Outdoor Writers Association of America and local sportsmen's organizations. He has just returned from another safari in the Dark Continent, fishing and hunting in parts of Africa never before seen by white men.

Point!

By Herbert Kendrick



THE primary purpose during the life of a gun dog is the successful handling of game. He is a specialist in the sport of upland gunning, making it possible for his master to determine the location of a bird, allowing the gunner ample time to reach the scene and prepare himself for a clean kill. No matter how efficiently a dog may search and locate game, he cannot be classed as a finished gun dog unless he possesses a thorough knowledge of bird habits, characteristics, and understands the distance to approach—close enough to make a bird sit tight, yet far enough to prevent a flush. Speed, endurance, stamina and courage, stylish points, and gentlemanly backing are necessary qualities in a dog and contribute greatly to field perfections, yet an animal with all the class in the world will fail to warm your heart unless he has been bred, trained, and experienced in the fine art of game handling.

Bird dogs are as peculiar as people, and as different as thumb prints. This is especially true in the manner in which they point their game. While one may point fifty feet from a bird, another dog, equally as good, may point almost on top of his game. The element of time, weather conditions, locality, cover, and general game disturbances will vary the technique used by pointing dogs; however, the greatest variation is brought about by the game bird itself. The grouse requires entirely different handling from the ringneck, quail, woodcock, or the sharp tail grouse. All require individual pointing attention if a

J. Otis Carpenter, well-known Harrisburg sportsman, shoots over a pointer and setter from his large kennels of fine gun dogs. Pointing ability, as displayed here, is the ultimate mark of superior bird dog.



hunt is to be highly successful and pleasing. It is easy to understand why we cannot expect a single bird dog to efficiently work on all upland game birds, after we have sufficiently studied the birds, even though locality and cover be the same. Once in a while we find a rare canine great possessing the brains and adaptability to handle them all. Such cases are very few and far between.

A game bird that has managed to escape hungry predators, survived rough winters and evaded scatter gun loads long enough to become full grown, acquires a powerful amount of experience and education in ways and means of fully protecting himself. He becomes a wise bird who can make it extremely difficult for our best dogs to handle.

To make a grouse hold to the point, the dog must be fast, bold and accurate, approaching his game confidently and with the minimum of "game making." This decisive action seems to bewilder the bird, thus enabling the dog to pin him down, while he fears to run or fly until the hunter approaches. The slow pottering dog allows a grouse enough time to plan and execute a safe retreat. The bird dog that successfully points and holds this most difficult of all game birds is a rare treasure indeed.

The ringneck is a strong, fast running bird and is a difficult task for the pointing dog. Many worthwhile dogs use the "roading system," following the pheasant into heavy cover where a definite point may be established. This method is hard on both hunter and dog, because considerable distance is usually covered before the bird squats or flushes.

There are a few dogs that have learned to close in on a running bird, circle and point in front of the runner, thus locking him up tight.

Here again the best performer is the fast, snappy dog that covers a ringneck before he has time to plan his retreat.

Of all upland game birds, the quail synchronizes most perfectly with the pointing dog and normally will lie quietly to a point. Bob White is the bird on which to train the young dog, because this bird may be found in the open fields, and will lie close in cover for a long period of time, thus enabling the trainer to work on the dog as he points. I have seen quail in swampy woodland cover that proved exception to the rule; however, I do feel the quail is by far the easiest of game birds for the dog to handle. Pennsylvania has again opened the season on quail. Go easy on them; they have had a rough time since 1936.

Woodcock lie close under most conditions, but still require delicate handling by seasoned, well experienced woodcock dogs. Many dogs, excellent on other birds, refuse to either point or retrieve a woodcock. Special handling and attention is required for the dog that bypasses the timberdoodle.

These are the days to use a dog for your pleasure and his. Make sure he is hardened enough to stand all day hunts. Check his pads for cuts or bruises during the early hunts. Don't let him get away with serious faults, yet treat him kindly and give him an opportunity to show you where game is hidden. Feed him well, transport him, and house him comfortably while on trips and see a vet if he shows signs of sickness. Handle him in an affectionate manner, rewarding him when his performance is satisfactory. Don't rush him on point and do not shoot too many guns close to him. Give him time in thick cover and avoid shouting and excessive whistling. Above all, be careful with your loaded gun and don't allow avoidable accidents to mar your life.

Bird dog days are here, so make every effort to spend all the time you can with your dog in the fields and woods and store up new memories that will live long after your gunning days are over.

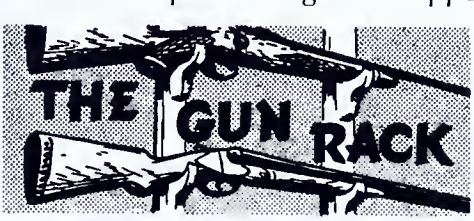
Better Be Sure Than Sorry

By Ed Shearer

ABOUT this time of year, deer hunters are preparing for their annual trip to the big woods. And it would be a pious idea for the hunter to give a little serious thought and attention to his outfit, starting with his rifle and its ammunition. All too many hunters reverse this procedure. They spend plenty of time checking every thing from warm clothes and extra socks to a bottle of their favorite concoction to ward off chilblains. Then they wind up (usually at the last minute) buying a box of cartridges, casting a casual glance at the old musket to be sure there is still a hole in the barrel—and "They're off." The grief these trusting brothers reap is part of the seasonal comedy and maybe tragedy in the deer country.

Every season, in covering a stretch of deer country, you run across the proverbial pilgrim who arrives with a rifle chambered for one cartridge and hulls for another breed of cats. The 30 caliber seem to be the chief offender in this form of woe. It seems that all newspaper reporters and quite a few hunters have a firm belief that any rifle with a 30 caliber hole in the barrel is a "thutty-thutty." This has been occurring as far back as I can remember and I suppose it will go on to the end of time. The only cure is for the hunter to make up his mind as to just what rifle and cartridge he is using.

Sometimes queer things can happen



even with correct cartridges for the rifle. I ran across a hunter who was in the depths of dispair. A buck gave him two standing shots or what would have been two shots if the cartridges had fired. As his rifle was a lever action carbine like mine, I asked to see the cartridges that misfired. One glance showed the trouble. One brand of ammunition at that time had the primers seated unusually deep. The firing pins on that model were too short to give reliable ignition. I had tried out the same brand on my test range, and found that misfires were the rule rather than the exception. A handful of my cartridges put him back in business, but did not restore the lost chance on a buck which does not come too often these days.

Another class of hunters I have ran across apparently believe any cartridge they can get into the chamber of their rifle is O. K. This is an extremely dangerous proceeding. For instance, a good way to cash in on your insurance policy is to drop an 8 M/M Mauser cartridge into the chamber of a 30-06 and pull the trigger. The last case I know of recently happened at a hunting camp near my home. Some hunters were shooting mark and one of them dropped an 8 M/M Mauser into a Savage 30-06 rifle. He died in the hospital shortly after. This is not an isolated case. Winchester was forced to take the 95 model lever action off the market, due to these optimists who persisted in trying to push a .323 bullet through a .308 barrel. With a good modern bolt action having two locking lugs at the breech, the bolt generally holds even though the rest of the rifle is wrecked. But the old Winchester Model 95 was locked at



The Meadville Sportsman's Club entered this float in a 1952 halloween parade and took second prize with it. More than that, the Club originated an idea that proved highly successful in firearms safety education. A committee, consisting of Charles Peterman, Joe Damico, Trace Braymer, and Hugh "Pete" Hart, with Al Smock as chairman, designed and constructed this highly attractive exhibit.

the rear end of the breech block; the action was usually demolished.

As there are plenty of Winchester Model 95's around this does not mean they are not safe with any commercial 30-06 load on the market. Just make doubly sure that is the cartridge you put in them.

Another item high on the list of laments is the last minute guy who rushes into the sporting goods store and says, "Gimme a box of Umpteen Specials," and rushes right out to the car. This is the same character who sets up the cook's discarded dishpan at 25 yards (he swears it's a hundred). If he lands on it anywhere, the rifle is O. K.

Any hunter who starts on a big game hunt without checking the performance of his rifle with the ammunition he is going to use is a prime candidate for the, "Sadder but wiser club." The reason is, many rifles with full power loads may shoot bullets of different weights, to entirely different points of impact. Some rifles are more sensitive to changes than others. For instance, 30/30 lever actions I have shot appear very sensitive in this respect. Sometimes even a different brand of ammunition with the same bullet weight will shoot to a different point of impact. I have seen rifles vary as much as 14 inches at 100 yards with different weight bullets in full power loads.

The next item on the grief list is grease congealing in the bolt or breech block in cold weather, cushioning the blow of the firing pin, thus causing the rifle to misfire. This will be my 49th season hunting deer and I cannot remember one season that some one did not get hooked on this one. In fact in my callow youth I was a victim myself. While never a grease man, my downfall was being a firm believer in oils as a sovereign remedy for gun actions. Thus, on a certain below zero morning, I was perched well up the side of a deep hollow, waiting for the drive to come through.

After an interminal time enacting the role of the human icicle, a good buck appeared in the pines some 40 yards below me. A careful aim, a good trigger squeeze, a dull click—and right there, I learned the hard way. A lesson I never forgot.

There will be several thousand new rifles sold this year to new and not so new hunters. All factory rifles come well packed with grease of some kind. Most hunters wipe out the barrel, clean the outside of the action, and call it a day. Do not be deceived! If it's a bolt action, remove the striker from the bolt sleeve and wash off with gasoline. In other actions be sure the breech blocks are thoroughly cleaned of grease. Just a whisper of oil is enough to keep any action happy. In very cold weather use powdered graphite. Then the buck you should have gotten is the buck you will be eating.

Just because your rifle was right on the nose last season is no guarantee that it will be there this season. Any number of things could have happened. The stock, especially in tight-bedded rifles may have warped slightly during the hot humid months of summer causing a change of pressure against the barrel. This could cause quite a change in the sighting. How much depends on the individual barrel.

The first step in readying the rifle for the hunt is to check the guard screws. Loose guard screws in a bolt action rifle can make a whale of a difference in the center of impact. Set them up tight with a long shanked screw driver that fits the slot of the screws. Then check your sights to be sure they have not been changed. It pays to do this every time before you leave home or camp for the days hunt. In addition to the chance of unnoticed damage to the sights, there is always sure to be one pest with an uncontrollable desire to see how the gadget works—with or without permission. If you use telescope sights, religiously check the mount screws.

Now the final step. Forego the time honored tin can or the fuzzy pencil marked bullseye on the paste board carton the milk came in. Get a standard small bore target with a bull you can see to aim on. Set it up at 12½ yards if you are using metallic sights; 25 yards for scope sights. Now the shots will be somewhere on the paper and the sights can be adjusted to center them. This is important, as a one inch error at 12½ yards will be multiplied 8 times at 100 yards. Errors at 25 yards will be multiplied 4 times at 100 yards, and so on. Then at 100 yards from a steady shooting position, sight medium velocity rifles such as 30/30—32—35 calibers, so the center of the group is 2 inches high. Then it will be on the nose at 150 yards and 4 or 5 inches low at 200 yards.

Scope sighted rifles that use cartridges of high velocity and are to be used in fairly open country should be sighted to strike 3 inches high at 100 yards. That would put the 180 grain 30-06 right on the nose at 225 yards, the 150 grain at 250 yards. The 270 with 130 bullet would stretch it to about 275 yards. Of course any hunter can sight his rifle for any range he desires, but he will save a lot of ammo if he starts at 12½ and 25 yards.

Summing up, it can be readily seen that 99% of hunting grief can be prevented by a little time and thought, before starting on the hunt. There is just one more thing every hunter should not neglect to take afield with him; a generous supply of caution and common sense. In these days of mass hunting, no man can be entirely sure that no hunter may be in the line of fire while actually shooting at a deer. Also ricochet bullets do strange things. BUT there is absolutely no excuse for shooting ANY HUNTER in mistake for a deer. If you ever see a deer walking on two legs, dressed in a suit of clothes, or a man with four legs, an all-hair coat with horns on his head, you should sign the pledge.

So hunt safely! Know what you are shooting at, and make it a great season for all—Not a tragedy for someone.

Shooting Form



By Tom Forbes

PART III—ANCHORING

IN THE high or cheek anchor the method of positioning the drawing hand differs among individual bowmen. Each individual will select an anchor point that best suits his physical conformation and as long as the anchor point chosen is a positive one the bowman will be assured of the arrow being released from the same position at each cast.

The position of the right hand of the bowman at release performs the same function as the fixed rear sight on a rifle. The hand governs the angle which the arrow makes with the horizontal as it begins its flight. In addition the position of the hand at release also determines the velocity of the shaft as it leaves the bow. If the hand draws the bow string the same distance each time and if the hand is positioned at the same elevation below the right eye for each draw, then each arrow will have the same trajectory and elevation as it leaves the bow. Elevation will be a hit or miss proposition at the best regardless of the positioning of the hand and the ability of the bowman to estimate distances to the target without a fixed anchor.

Several mehods are in common use for fixing the position of the drawing hand. The middle or ring finger of the hand being the longest it is frequently employed to position the hand by touching the tip of the finger against the corner of the mouth or by feel locating a certain tooth in the lower jaw. Other bowmen use the extended right thumb which they bring into position under the lobe of the right ear and pushing against the back of the lower jaw at the hinge in the same manner as one impresses his thumb print on a piece of paper. Regardless of the method you adopt it must serve to bring the hand to the same position for each shot. This is one of several musts in archery if you expect to acquire any facility in the use of the bow.

AIMING

Probably the most controversial subject in archery today is aiming. So bitter are some proponents of their favorite method that they have lost sight of the main objective which is and always has been to hit the target. In the case of the bow hunter it means hit that vital area which results in a quick kill and not just a wounded deer.

Differences in aiming methods have resulted in dividing archers into two general groups rather loosely designated as Instinctive and Free-style archers. Some groups confine and limit their competition to those archers who use their particular style of aiming. Many expert archers pass freely from group to group adjusting their shooting style to the demands of the occasion.

In Pennsylvania a live and let live policy has wisely prevailed in most of the clubs and in competition equal awards are made to both groups of shooters.

The Free-Style shooter is more aptly defined as a sight-shooter and the Instinctive shooter is in reality a point-of-aim shooter, but unlike the target archer who affixes a point-of-aim at a definite spot for each yardage he intends to shoot, the instinctive shooter estimates the yardage and varies an imaginary point-of-aim to correspond with his yardage estimate.

Since the terms Free-Style and Instinctive are commonly used and generally understood we will use them throughout the remainder of this article.

The sight shooter almost invariably uses an under-jaw anchor and we are dealing in this article with the high draw or cheek anchor used by the instinctive archer who is sometimes described as a "Bare-bow" shooter because he does not use a sight affixed to the upper limb of the bow.

The instinctive archer anchors his right hand on the draw and cants the bow from the vertical in order to bring the shaft of the arrow directly under his right eye. He brings the arrow shaft in line with the target and raises or lowers the apparent position of the point of the arrow as it is superimposed on the target area to compensate for the distance the arrow must travel in its flight to the target. He has in effect chosen a point-of-aim in order to hit his primary target.

The heavy hunting bow is a decided advantage to the expert archer in the hunting field. The flat trajectory of the arrow over short ranges keeps the primary target and the point at which the archer aims the point of the arrow relatively close to each other. In event the first arrow misses its intended target the bowman can immediately correct his secondary aiming point right or left, up or down, to secure a hit on the primary target with the next arrow. If the bowman literally tries to shoot instinctively while viewing solely the object he desires to hit he will have no precise method of correcting his error and cannot be assured of a hit on any succeeding shot.

To shoot well the bowman must shoot with both eyes open. This is an advantage and not a handicap as is frequently assumed. Each of us has a master eye which can be quickly determined by pointing the index finger of the outstretched hand with both eyes open at an object several feet distant and then alternately closing either eye. If the finger appears to remain on the object when one

Regardless of the anchoring method used, it must serve to bring the hand to the same position for each shot. This archer displays excellent shooting form, using the high or cheek anchor to position the drawing hand.

Photo by the Author





Photo courtesy Lynch Camera Shop, Erie

One of the first bucks bagged in the 1954 special archery season was killed at 4:30 p. m., October 11th, in Venango Township, Erie County. Shown admiring his 128 pound (hog-dressed), 8 point trophy is Jack Lynch, right, of Erie, along with Jack Weber, proprietor of an Erie sporting goods store.

eye is closed then the other eye is the master eye. Reverse the procedure and the finger will apparently move to one side of the object. A saving feature if your left eye is the master eye under the test described, is that it will change to your right eye when you bring the bow to full draw with the arrow shaft under your right eye.

With both eyes open the vision should be centered directly on the exact spot you wish your arrow to hit. Now bring the tip of the arrow into you line of vision and spot it at the point you choose for an aiming point without taking your vision from your original target. This is the crux of the matter. If you switch your vision back and forth from the object you desire to hit and the tip of the arrow and aiming point the result will be disastrous. You must concentrate your vision and your thoughts on the exact spot you wish to hit. Seems impossible? Well it can be done. A surveyor sights through the telescope of his transit with both eyes open. One eye sees a close-up of objects through the lens and a limited field, and the other eye sees all of the surrounding area naturally.

Obviously the imaginary aiming point must be selected with reference to the weight of the bow and the distance to the target. At close ranges, a sixty pound hunting bow will have almost a point blank range. The point-of-aim may even fall below the actual target, while a lighter weight bow would in similar circumstances require the imaginary aiming-point to be located above the target area.

When you spot your buck this October, fix your vision directly on that vital area just back of the foreshoulder. Keep your vision and your entire attention riveted on that spot. Remember that is where you want your arrow to strike. Bring the bow to full draw and as the arrow point appears in your field of vision place it on a selected imaginary aiming point and release the arrow. On your ability to select the proper aiming spot will depend your success in placing the arrow in the vital area from

which your attention and vision has never wavered.

The selection of a proper aiming point for various distances will come through practice.

Precision shooting with a sight at known distances, using the under aw anchor, is somewhat comparable to the match rifleman's method of shooting. Neither system, in my opinion, can be transferred bodily to the hunting field. Just as a good match rifle may be a very poor hunting weapon, so an excellent target bow may be too light for accurate work in the hunting field.

Although I am not without experience in the effort entailed, I believe the free-style shooter will have better success in the hunting field if he will become proficient in the use of the high anchor and equip himself with a heavier bow than he normally uses in target shooting. His knowledge of yardages gained in target shooting will be of considerable aid in estimating distances and choosing his imaginary point-of-aim. One of the advantages of the heavier bow is that its flat trajectory at short distances will offset to a considerable extent errors in judgment of distances particularly in ranges up to thirty-five or forty yards.

An experienced target shooter who uses the under jaw anchor will appreciate the value of a light weight bow while accustoming his muscles to the high anchor draw. Once he has acquired facility with this method he should be able without difficulty to shoot a heavier bow with a fair degree of accuracy after a couple of sighting shots to determine the imaginary aiming point.

There will be, of course, the bowmen who claim they do none of the things described in this article in shooting a bow and that they do shoot entirely by instinct. Even so, I believe these bowmen would make consistently better scores if they knew why they erred and missed their first shot and corrected their next shot accordingly.

DON'T KILL BIG GAME OUT OF SEASON!

The Game Commission's law enforcement officials have commented on a decided increase in deer killings over the State in early fall. They note also that many of those who hunted, shot or possessed deer so killed were apprehended.

Some of the violators appeared unaware that there was more than a cash penalty or jail sentence involved for such acts. For that reason the authorities recount here the severe consequences prescribed in the Game Law for big game killing in close season. A 1953 amendment to the law provides:

1. It shall be mandatory that anyone hunting, killing, wounding, transporting, concealing, or having in possession a deer taken in close season shall lose his hunting and trapping privileges for *three years.*

2. It shall be mandatory that anyone found guilty of hunting, killing or attempting to kill, possess, etc., a bear in close season shall lose his hunting and trapping privileges for *five years.*

The cash penalties remain at $100 for each deer and $200 for each bear illegally killed or possessed, in or out of season, or one day in jail for every dollar of fine and costs imposed.

The Game Commission cautions persons tempted to hunt, kill or possess a deer or bear in close season to seriously consider the consequences and restrain themselves, leaving these prize big game animals for sporting guns in season.



Christmas Gift Suggestions

A FIELD GUIDE TO MAMMALS

By William Henry Burt

Well illustrated with 187 full color reproductions of paintings by Richard P. Grossenheider, and also many maps and black and white photographs. Published by Houghton Mifflin Company, Boston; 1952.

200 pages. Price $3.75

Burt and Grossenheider have combined their talents to produce a book that enables the user to quickly identify most mammals that are native to the United States and Canada. Using the popular and successful field mark identification method developed by Peterson in his books, "Field Guide to Birds" and "A Field Guide to Western Birds," Grossenheider's life-like illustrations are nearly a complete guide in themselves.

Burt presents concise descriptions of the size and color of each recognized species of mammal, where it is most likely to be found, and certain key characters that distinguish it from animals of similar appearance. Maps showing the distribution of each mammal further simplifies identification, for the user need only concern himself with those individuals that occur in his locality. To aid in the identification of mammal skulls that might be found in the woods or fields, there is a list of tooth formulae as well as photographs of the skulls of 19 land mammals. The author has thoughtfully included a check list upon which the user may keep record of the different species of mammals observed.

Both the layman and the technically trained worker will find the book an invaluable aid in extending their knowledge of our native, but oftentimes unrecognized mammals.

THE STORY OF COLT'S REVOLVER

By William B. Edwards

Illustrated with many sketches and black and white photographs. Published by The Stackpole Company, Telegraph Press Building, Harrisburg, Pa.

470 pages. Price $10.00 for standard library edition; a limited supply of leather-bound gold-stamped copies available at $25.00

This is a biography of Colonel Samuel Colt. It is the story of an invention, an amazing family, and mass production. It is the tale of a smooth-faced Yankee boy; the efforts and failures of an energetic, ambitious young man; and the saga of opportunity in early America. Strangely, it was not the armed forces which wrought the spectacular change wherein Samuel Colt's new and efficient repeating arm molded American history. Basically, the early Colt revolver was the weapon of a civilian. This story of Colt's life will be of exceptional interest to the gun collector and hobbyist as well as to every sportsman who has ever owned one of these famous revolvers.

HAMMOND'S GUIDE TO NATURE HOBBIES

By Dr. E. L. Jordan

Drawings by Herbert Pierce. Published by C. S. Hammond & Co., Maplewood, N. J.

64 pages. Price $2.95

This book is just the answer to a youngster's summer vacation problems. It will give anyone at all interested in the outdoors a million and one ideas on how to enjoy nature more. From collecting shells, rocks and minerals to nature and wildlife photography, this guide helps in every outdoor hobby. One chapter, for instance, describes all sorts of bird

hobbies—bird watching, feeding, attracting, and banding. You can even learn how to build, stock, and maintain an aquarium. This is a book that is designed for the entire family. It will make every trip afield or every picnic a more fascinating event.

ASSIGNMENT SAFARI

By F. Wallace Taber

Strikingly illustrated with 47 black and white photographs. Published by F. Wallace Taber, P. O. Box 387, Denver 1, Colorado.
74 pages. Price $1.35

In addition to one of the most objective reports on modern African wildlife conditions ever written, Taber presents an informative discussion on the selection of rifles for African hunting. The author has written this book in answer to requests he has received for additional information since publication of his first African experiences and the showing of his film, "Safari." Anyone who saw Wally Taber on his personal appearance tour of Pennsylvania this spring will realize how accurate and interesting this book will be. And for those who were less fortunate in not being able to see Taber's program, this book will make a fine substitute.

HOW TO SURVIVE ON LAND AND SEA

Written and Revised
By Frank C. and John J. Craighead

Profusely illustrated with black and white photographs and thumbnail sketches. Published by the U. S. Naval Institute, Annapolis, Maryland; 1951.
340 pages. Price $4.00

This manual was prepared to meet the need for essential, yet comprehensive information on the technic of survival under unusual conditions. It treats survival on a global basis, emphasizing principles that can be grasped quickly and practiced to the benefit of any person cut off from civilization.

The information is arranged under the general chapter headings of Survival Hints, Orientation and Traveling, Water, Wild Plant Food, Wild Animal Food, Firemaking and Cooking, Shelter, Survival in Special Areas, Environmental Hazards, and the Naval Aviation Training Program. Each of these chapters is subdivided into many sections, and the context is supplemented with many illustrations.

In addition to serving the military, this book has a great value as a practical reading reference for all outdoor enthusiasts. Not only will this information broaden a woodsman's knowledge, but who knows, it may save his life.

FIELD BOOK OF NATURE ACTIVITIES

By William Hillcourt

Illustrated with many line drawings by Francis J. Rigney. Published by G. P. Putnam's Sons, 2 West 45th Street, New York City, New York; 1950.
320 pages. Price $3.95

This new volume, by a member of the National Staff of the Boy Scouts of America, is a welcome addition to the G. P. Putnam's Sons field book series. It is a broad approach to the entire field of nature hobbies from bird study through nature photography and the collection of all natural objects. There are clear instructions on scientifically approved methods of making collections, special tips for adding interest and variety to a nature hobby, and suggested references for advanced study. Although the budding naturalist, whether Boy Scout, 4-H Clubber, or Girl Scout, will treasure this book, it is not "written down" to the child and many adults will derive much pleasure from the wholesome hobbies so clearly and authoritatively outlined.

CORRECTION

Through an inadvertent error in the November, 1953 issue, full authorship credit was not given the book "The Clever Coyote", published by the Stackpole Company, Harrisburg. This volume was authored by Stanley P. Young and Hartley H. T. Jackson.

1954 PENNSYLVANIA OPEN SEASONS FOR WATERFOWL AND OTHER MIGRATORY GAME BIRDS UNDER FEDERAL AND STATE REGULATIONS

SPECIES	OPEN SEASONS FIRST DAY	OPEN SEASONS LAST DAY	DAILY BAG LIMITS	MAXIMUM POSSESSION LIMITS*	LEGAL SHOOTING DAYS AND HOURS (SUNDAYS EXCEPTED) BOTH DATES INCL.	HOURS (EASTERN STANDARD TIME)
Sora	Sept. 1	Nov. 9	25	25	Sept. 1 to Nov. 9	½ hr. before sunrise to sunset
					Oct. 30 only	9:00 A.M. to sunset
Rails (except Sora) and Gallinules	Sept. 1	Nov. 9	15	30	Sept. 1 to Nov. 9	½ hr. before sunrise to sunset
					Oct. 30 only	9:00 A.M. to sunset
Woodcock	Oct. 1	Nov. 9	4	8	Oct. 1 to Nov. 9	½ hr. before sunrise to sunset
					Oct. 30 only	9:00 A.M. to sunset
NO FEDERAL STAMP REQUIRED TO HUNT SORA, RAILS, GALLINULES, WOODCOCK, JACKSNIPE AND DOVES.						
Wilson's or Jacksnipe	Oct. 1	Oct. 15	8	8	Oct. 1 to Oct. 15	½ hr. before sunrise to sunset
Doves	Sept. 15	Oct. 14	8	8	Sept. 15 to Oct. 14	½ hr. before sunrise to sunset
Ducks (including American and Red-breasted Mergansers)	Oct. 15	Dec. 13	4 (only 1 Wood Duck) (only 1 Hooded Merganser)	8 (only 2 Wood Ducks) (only 1 Hooded Merganser)	Oct. 15 only Oct. 30 only All other days of open season	12:00 Noon to sunset 9:00 A.M. to sunset ½ hr. before sunrise to sunset
Geese (except Snow)	Oct. 15	Dec. 13	2**	4**		
Coots	Oct. 15	Dec. 13	10	10		
Brant	Oct. 15	Nov. 13	6	6		

FEDERAL STAMP REQUIRED

The season for waterfowl (except Brant) and Coots on the Delaware River between Pennsylvania and New Jersey below Trenton Falls and the Counties of Bucks, Philadelphia and Delaware on the Pennsylvania side shall be from November 3 to January 1, incl. Shooting hours on opening day 12:00 o'clock Noon.

NO OPEN SEASON—SNOW GEESE, AND SWANS.

*Possession 90 days after close of season where taken.

**Not more than 2 geese of any kind (except Snow Geese) in a straight or mixed bag a day, or 4 singly or in the aggregate in possession.

MIGRATORY BIRD HUNTING METHODS

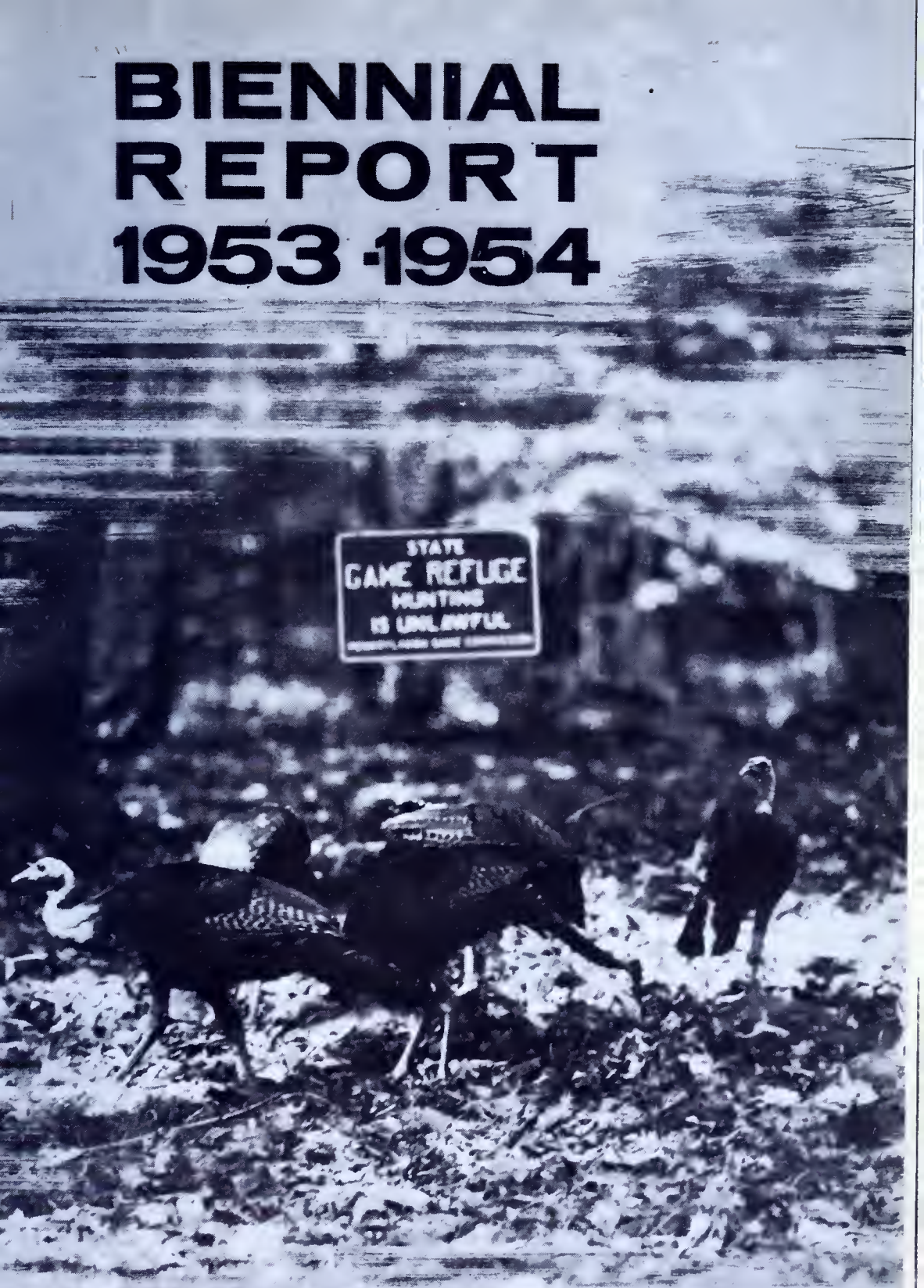
Permitted: Bow and arrow, or shotgun not larger than 10-gauge, fired from shoulder (including hand-operated and semi-automatic repeating shotgun of not more than 3-shell capacity, which must be plugged to 3 shots so that plug cannot be removed without disassembling the gun); dog; blind; boat propelled by hand; floating device other than sinkbox; artificial waterfowl decoys. Injured or dead waterfowl may be picked up by means of a motorboat; sailboat or other craft. Shooting is permitted from a boat or other craft having a motor attached if such craft is fastened within or tied immediately alongside of any type of stationary hunting blind.

Prohibited: All rifles; live duck or goose decoys; automobile; aircraft; sinkbox (battery); power boat, sail boat, or any device towed by power boat or sailboat. Waterfowl, coot, gallinules and doves may not be taken under any circumstances by the aid of salt, or shelled or shucked corn, wheat or other grains, or any other feed or means of feeding similarly used to lure, attract, or entice such birds to, on, or over the area where hunters are attempting to take them. As used herein the terms "salt, or shelled or shucked or unshucked corn, wheat, or other grains," or "other feed or means of feeding similarly used," shall not be construed as including salt blocks, properly shocked corn, standing crops (including aquatics), flooded standing crops, flooded harvested crop lands, or, in connection with the hunting of waterfowl, coot and gallinules, grains found scattered solely as a result of normal agricultural practices, or, in connection with the hunting of doves, grains found scattered solely as a result of normal agricultural harvesting. Waterfowl may not be taken by means, aid or use of cattle, horses or mules and no motor-driven land, water or air conveyance or sailboat may be used to concentrate, drive, rally or stir up waterfowl or coots.

FEDERAL STAMP FOR MIGRATORY BIRD HUNTING

It is unlawful for a person over the age of 16 years to take migratory waterfowl unless he carries on his person an unexpired Federal migratory bird-hunting stamp, validated by his signature written in ink across its face. Not valid after June 30 following date of issue. This stamp is not

BIENNIAL REPORT 1953-1954



Pennsylvania Game Commission

IN MEMORIAM

WILLIAM G. MATTHEWS

William G. Matthews, of Ligonier, passed away August 6, 1954, two years after he retired from active service with the Game Commission. He began and ended his official duties in Westmoreland County, starting there as Game Refuge Keeper No. 5, and ending as a District Game Protector.

THOMAS A. MOSIER

Thomas A. Mosier, of Bellefonte, passed away April 2, 1954, two years and eight months after his retirement on July 17, 1951. He was a District Game Protector during his many years of service, all of which was rendered in Centre County except for a two year period in Erie County.

LYNN B. ROSENKRANS

Lynn B. Rosenkrans, of Forty Fort, passed away February 10, 1954. At the time of his death he was on the staff of the Northeast Field Division Office as Conservation Education Assistant. Other assignments during his many years of service included Game Refuge Keeper, District Game Protector, Trapping Instructor and Special Services Assistant.

COMMONWEALTH OF PENNSYLVANIA

PENNSYLVANIA GAME COMMISSION

HARRISBURG

OFFICE OF
THE PRESIDENT

June 1, 1954

To His Excellency John S. Fine
Governor of Pennsylvania
Harrisburg, Pennsylvania

Sir:

It is with considerable pleasure that we submit our report for the biennium June 1, 1952-May 31, 1954. During that period the broad program of wildlife restoration has forged steadily ahead. Some of the achievements which contributed to this progress are historically noteworthy.

Principal among them are the tremendous success we have had in extending the range of the wild turkey, an accomplishment for which the Commission and certain of our personnel were nationally acclaimed; our intensive wildlife management, law enforcement, game propagation and research programs, and the influence our public relations and conservation education endeavors has had in making our citizens appreciate more our wildlife heritage.

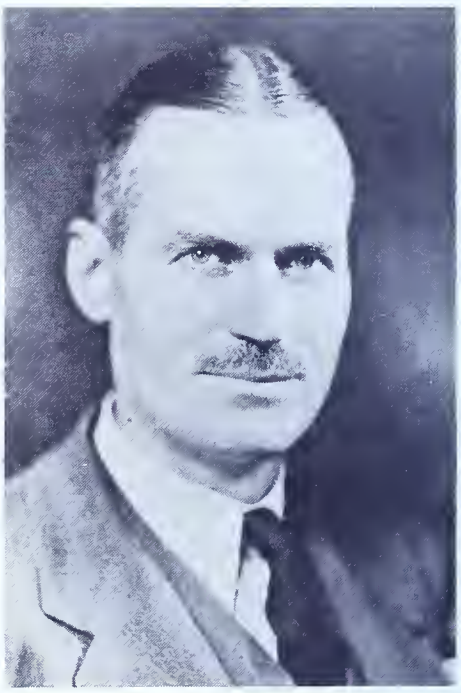
Many of our efforts would not have been so successful had it not been for your personal support, and that of the General Assembly, the sportsmen, farmers and other conservation minded groups within the Commonwealth. We wish publicly to gratefully acknowledge this splendid cooperation.

Respectfully submitted,
John C. Herman, President
Nicholas Biddle, Vice-President
Ross L. Leffler
G. I. Phillips
B. K. Williams
Herbert L. Buchanan
Andrew C. Long
T. L. McDowell

Attest:
Logan J. Bennett
Executive Director



JOHN C. HERMAN
President, Pennsylvania Game Commission
January 8, 1953—



COL. NICHOLAS BIDDLE
Vice-President, Pennsylvania Game Commission
January 8, 1953—

Highlights

PERSONNEL

The past two years have witnessed some substantial gains in wildlife conservation, but, at the same time, some tremendous losses—personal losses. Some members of our official family passed on their final reward while still in service; others during retirement. Their names are affectionately recorded on our memorial roster.

We are also sorrowfully reminded of the death on September 8, 1953, of John M. Phillips, Pittsburgh, a former Game Commissioner and one of conservation's greatest benefactors. He was 93 years old.

In saluting his memory and notable achievements, we also wish to pay tribute to another great conservationist who is still alive—J. Q. Creveling, Esq., of Wilkes-Barre, a former member of the Commission. Mr. Creveling is also 93. Both of these trail blazers helped to perpetuate the rich outdoor heritage which we are still striving so hard to protect.

Two of our associates found it necessary to resign: Harold Moltz, of Williamsport, on January 20, 1953 and Joseph P. Willson, of Smethport, on July 22, 1953. Both of these men contributed a great deal of their talents and time to further conservation's cause.

Their resignations left three vacancies on the Commission (one having previously occurred upon the death of Commissioner Robert Lamberton, Franklin, on July 20, 1952). These were subsequently filled with equally devoted conservationists: Herbert L. Buchanan, of Franklin; Andrew C. Long, of Shamokin; and Tom L. McDowell, of Bradford.

The past two years also witnessed the retirement of one Executive Director and the appointment of another:

Thos. D. Frye, former Executive Director, of Camp Hill, retired on September 30, 1953, after five years of able administration.

Doctor Logan J. Bennett, his successor, assumed his official duties as Executive Director on October 1, 1953. He was no stranger to the Commission, employees or the sportsmen for he was well known to all while serving as leader of the Pennsylvania Cooperative Wildlife Research Unit at Pennsylvania State University from 1938 to 1947. Dr. Bennett next became Section Chief of the Cooperative Wildlife Research Program and later, Chief of Wildlife Research for the U. S. Fish and Wildlife Service, with headquarters in Washington. Only recently his outstanding record with the Federal government was acknowledged by the presentation of the U. S. Department of Interior Meritorious Service Award. It honored Dr. Bennett's more than eighteen years of superior service in wildlife research and management.

CITATIONS

The period covered by this report was highlighted by some unusual citations, all of which are reported here in modesty and humility:

On October 27, 1953 Governor John S. Fine accepted from *Outdoor Life* Magazine, on behalf of the Commonwealth, one of the magazine's highly coveted conservation awards. This outstanding honor was granted Pennsylvania for so effectively managing and conserving the wild turkey. At the same time, Game Protector Orrie Smith, of Amaranth, was presented a $100 cash award for having originated an idea for developing a wilder strain of turkeys.



DR. LOGAN J. BENNETT
Executive Director
October 1, 1953—



THOS. D. FRYE
Executive Director
October 1, 1948—September 30, 1953

On January 7, 1954 Roger Latham, Chief of the Commission's Wildlife Research Division, and Game Protector Orrie Smith, were selected by the Nash-Kelvinator Corporation as two of ten professional conservationists who made outstanding contributions to the conservation of the nation's natural resources. A check for $500 to each recipient of the award accompanied the recognition.

In May, 1954 Leo A. Luttringer, Jr., Chief of the Commission's Division of Conservation Education, was elected President of the American Association of Conservation Information.

In June, 1954 Ross L. Leffler, veteran member and former president of the Commission, was singled out, along with two other prominent individuals, to make a complete survey of the organization and administration of the U. S. Fish and Wildlife Service. Mr. Leffler, an official of the U. S. Steel Corporation for many years, and a National Director of the Boy Scouts of America, was also presented the coveted Silver Beaver Award—highest in Scouting—during the 1954 National Jamboree in California.

On January 8, 1953 John C. Herman, of Dauphin, who had been serving as Acting President of the Commission since the death of Robert Lamberton, was unanimously elected to the presidency. Colonel Nicholas Biddle, of Bethayres, was elected Vice-President and Joseph P. Willson, Smethport, was elected Secretary. Following Mr. Willson's resignation, Commissioner Andrew C. Long, Shamokin, was elected Secretary.

In August, 1952 Mert Golden, who is in charge of the Commission's Cooperative Farm Game Program, won the Canadian National Pistol Championship at Ottawa.

REVENUE

More hunting licenses were sold than ever before and the largest amount of revenue ever accruing to the Game Fund was received. Revenue during the biennium totaled $8,603,747.24. Disbursements amounted to $7,906,679.66, slightly under the record established in the previous biennium.

HUNTING CASUALTIES

Despite all the efforts made to reduce the number of hunting casualties, 58 fatal and 871 non-fatal mishaps occurred during the two year period. There was one fatality for every 30,227 licensed hunters, based on the two year average of 876,593 hunters.

ANTLERLESS DEER SEASONS

Two state-wide antlerless deer seasons were held during the biennium, resulting in a harvest of 54,081 deer. Special licenses issued for the two seasons numbered 328,385. Such harvests are absolutely necessary to control the deer herd.

GAME LANDS

State Game Lands were increased by 6,685 acres, bringing the total area acquired for public hunting and wildlife restoration since the program began in 1920 to 905,743 acres. Included in the new acquisitions were 3,781 acres in Monroe County, now designated as State Game Lands No. 221. This six square mile tract in the Poconos near Cresco is easily accessible and provides excellent hunting and fishing.

GAME MANAGEMENT

Wildlife habitat improvement practices on Game Lands were numerous and extensive, so much so that to highlight them here would mean repeating



Wildlife habitat improvement has keynoted all restoration efforts made in recent years. All available manpower and machinery have been aimed at providing wildlife more food and more cover.

nearly the whole text on this important program. More than 1,721,000 shrub and vine seedlings were planted on over 1,700 acres of Game Lands to improve wildlife food and cover. Nearly 215 miles of woodland border cuttings were made to provide additional food and cover by stimulating growth and fruiting of native plants. Thousands of acres were planted to grains and seeded to clovers; grazing and nesting sites on other thousands of acres of old fields were improved by mowing, fertilizing and liming; hundreds of food strips were purchased on private lands to provide supplemental game food on farms open to public shooting.

TIMBER SALES

The management of forest areas for timber and wildlife has been a long-time practice of the Commission. It not only improves food and cover for forest wildlife but also provides a cash return on the sale of sawtimber, mine timbers, paper and chemical wood, posts, props and firewood. Last year the sale of these products amounted to $83,736.05.

During the past two years the Commission cooperated with the U. S. Forest Service in conducting a Timber Resource Review on State Game Lands. The study, part of a nation-wide project, determined sprout growth and reproduction that follow various cuttings, as well as other important forest management information.

HOWARD NURSERY

The Commission leased the former U. S. Soil Conservation Service' Howard Nursery, in Centre County, from the United States Government, effective January 1, 1954. This 77 acre tract will eventually replace the 13 small seedling nurseries operated on Game Lands by the Commission. Numerous sportsmen's organizations, Boy Scouts and 4-H Clubs benefited from this new acquisition through receiving nearly a million surplus seedlings given them by the Commission for wildlife plantings.



The final objective of any waterfowl management program is to provide more ducks for the hunter. Increased planting of aquatics, stocking of artificially reared ducks where necessary, creation of marshes, and construction of small impoundments in recent years have all helped make Pennsylvania a better duck hunting state.

WATERFOWL MANAGEMENT

Every effort was made to improve conditions for waterfowl through dams and small pond construction, as well as aquatic plantings. This program at present is confined to northwestern Pennsylvania but will be expanded later to other desirable areas.

One major waterfowl restoration project was successfully started on June 25, 1954 when Governor John S. Fine officiated at ground breaking ceremonies for the Conneaut Marsh Impoundment. Under this project, it will be possible to flood 550 acres of marsh, greatly improving the area for wild waterfowl.

EXPERIMENTAL MANAGEMENT—CONEMAUGH RESERVOIR

The Commission was granted permission by the United States Government on December 4, 1953 to manage wildlife on specified portions of the Conemaugh Flood Control Reservoir area in Indiana and Westmoreland Counties. This is the kind of cooperation that pays big dividends.

WILDLIFE DEVELOPMENT—ALLEGHENY NATIONAL FOREST

As on the Conemaugh Reservoir, the same pleasant relations exist between the Commission and the United States Forest Service through a cooperative agreement approved February 1, 1950. During the past two years, the Commission and the Forest Service have continued to combine forces in the management of wildlife on the Allegheny National Forest, much to their mutual benefit.

SPECIAL BULLETIN

Food and cover have keynoted much of the Commission's wildlife management program during the biennium. The demand from many private organizations and individuals for information on what to plant has been very great. In response to this gratifying demand, the Land Utilization Division prepared an outstanding bulletin on the subject which was published as a GAME NEWS Special Issue in March, 1953.

FARM-GAME PROGRAM

Pennsylvania's Cooperative Farm-Game Program is undoubtedly the largest cooperative effort ever sponsored by the Commission. Established in 1936, the acres now open to public hunting because of farmer cooperation total 1,040,144, representing an outstanding contribution to public hunting. But this is only part of the story. Improvement of wildlife habitat on these Farm-Game Projects—in seedlings and food strips planted, in cuttings and wildlife border plantings, in the establishment of farm ponds, in improving pastures and woodlot management—deserves close attention. The whole story appears later in this report, including game stocked, amount harvested, predators removed, food and cover development. Every sportsman should carefully analyze this amazing information.

WILDLIFE PROTECTION

Prosecutions for violations of the Game Law totalled 10,150 for the biennium. While this large number of law violations stands as a record, the Commission deplores the carelessness, lack of appreciation, and moral degeneration from which this record resulted. It is hoped that the $322,646.76 paid in fines by those who broke the law will have its proper moral effect.

Some violators were more severely punished by having their licenses revoked, 1,983 hunters having lost the privilege to hunt for one or more years. Fifty-two additional persons lost their licenses for having been convicted of wounding or killing a human being in mistake for game.

DEER AND BEAR DAMAGE

There has been some deer damage to cultivated crops, commercial nurseries and fruit orchards. Under the law, landowners may kill deer which destroy

When possible, black bears which are causing crop damage are live-trapped and moved to wooded areas remote from farmland. Here Commission field officers release a marauding bruin on State Game Lands 86, Warren County.

PGC Photo by Parlaman



their property, 3,490 animals having been so reported and disposed of during the past two years.

Black bears at times cause damage to livestock, poultry and bees. The Game Law provides that $5,000 be set aside annually to pay for such damage which, during the biennium, amounted to $7,264.75. Bear damage involved 170 claims covering the destruction of 484 beehives, 38 sheep, 5 pigs and 2 cows.

PREDATOR CONTROL

Predators have shown a tremendous increase in numbers, due primarily to a low fur market. As a result, methods of control were intensified by Commission personnel. Our trapping experts instructed 4,175 interested persons, most of them Future Farmers and 4-H Club boys, in how to trap foxes, raccoons, opossums, skunks, and weasels.

BOUNTIES

Bounties were paid during the biennium at the rate of $1.00 for each weasel, $4.00 for each red and gray fox, and $5.00 for each great horned owl. The number of claims received during the biennium totaled 29,667, including 19,693 weasels, 32,304 gray foxes, 34,235 red foxes, and 2,925 great horned owls. A total of $300,474 was paid in bounties on these animals and birds.

FURBEARERS

The market on fur of all kinds remained low throughout the two year period. Below normal pelt prices had a noticeable effect on this important economic resource although Pennsylvania trappers did receive $1,093,979.42 for the 739,430 pelts which were submitted to fur dealers during the 1952-1953 season. Based on preliminary figures, the 1953-1954 season will be comparable. Final tabulations are not yet available.

GAME PROPAGATION

Summed up, the story of the Commission's game farm operations during the biennium show that 628,268 game birds or animals were released on land open to public hunting in Pennsylvania. This total includes 112,295 cottontail rabbits, 473,196 ringneck pheasants, 16,870 bobwhite quail, 12,349 wild turkeys, 13,481 wild ducks, 27 Canada geese, and 50 Hungarian partridges.

In addition, 49 sharp-tailed grouse were released on an experimental basis in certain northwestern counties where the habitat is comparable to their Canadian homeland. These birds were a gift from the Province of Manitoba.

BANDED DUCKS

Of special interest to waterfowl enthusiasts is the fact that during the biennium 9,829 mallard ducks propagated by the Commission were banded and released. Later, 1,122 of the bands were returned. They came from 17 different states and several Canadian provinces—west to Wisconsin, north to Ontario, east to New York, and south to Alabama and Tennessee.

DAY-OLD PHEASANT CHICK PROGRAM

This program, begun in 1945, is another of those tremendously fruitful cooperative endeavors that spells achievement in numbers—large numbers. During this biennium, the program taxed the hatching capacity of the game farms but resulted in the distribution of 453,527 chicks to sportsmen and cooperating farmers. Of that number, sportsmen's clubs raised 107,505 pheasants and farmers 257,706. The average of 80% of these pheasant chicks



PGC Photo by Batcheler

The day-old pheasant chick program has proven to be one of the most successful cooperative endeavors. Over 453,000 pheasant chicks were distributed to sportsmen's clubs and cooperating farmers during the past two years.

raised to the liberation age of 12 weeks was the highest record to date. From all sources a total of 580,701 pheasants were released during the two year period—the largest number ever liberated by the Commission in a similar period.

TRAINING

Twelve student Game Protectors, carefully selected by competitive examination from among Deputy Game Protectors and Food and Cover corpsmen employed by the Commission, graduated from the Seventh Training Class on March 28, 1953. These officers are now successfully serving in the field.

PUBLIC RELATIONS

An intensive public relations program at the local level kept the public constantly informed of the Commission's activities. Close press relations were maintained by Field Division conservation education officers and Game Protectors. Many contacts were made with columnists, editors, radio personnel, TV commentators, and key individuals who mold public opinion. The Commission's weekly Newsletter also has been effective in maintaining good press relations at the statewide level.

CONSERVATION EDUCATION

Judging from the trend during the past two years, conservation as a basic philosophy and necessity has come into its own. Educators, industrialists, sportsmen, farmers, businessmen—all have recognized its need and true value.

The Commission tries to keep pace with the educational demands of the public. Six Conservation Education Assistants, alone, attended more than 1600 meetings, most of them in schools, sportsmen's clubs, service clubs and youth groups. More than 220,000 persons were in attendance at these meetings. But the big problem which confronted us during the past two years and which will continue to confront us in the future is how best to serve this great demand with the limited funds at our disposal.

RESEARCH

Numerous important research studies were undertaken during the biennium, several of which were completed. They included management studies of the cottontail rabbit, the white-tailed deer, the wild turkey and the woodcock. A survey of game food production practices is being made. The Commission's Division of Wildlife Research also commenced a study to determine the best plants to provide food and cover on power and pipeline rights-of-way. A study of the application of current management practices on the Conemaugh Reservoir area, as well as numerous other research projects, have been started and will be continued. Experiments are also being conducted to determine the colors which can best be contrasted with natural backgrounds to insure hunter safety. This study is being watched with interest by many states and private organizations interested in reducing gun casualties.

SPECIAL EVENTS

Pennsylvania Conservation Week, Pennsylvania Hunt Safely Week, and National Wildlife Week were fittingly observed in many ways and by many groups of interested persons. These special events provide splendid opportunities to either start or terminate related programs. Some organizations use these periods in which to award persons entered in essay or poster competitions, for window displays, or for other special projects. Certainly, they provide a wonderful opportunity for community cooperation and participation.

During April, 1953 Pennsylvania was host to the International Beagle Trial Association's annual meeting, this outstanding event having been held in Allegheny County.

In January, 1953 Ross L. Leffler, member of the Commission, was presented with a plaque commending his long and outstanding service with the Commission during the past 21 years.

A memorial was also erected on June 1, 1953 to Dr. H. E. Kilgus, deceased

Commission personnel gave every assistance possible to individuals and organizations interested in promoting Pennsylvania Conservation Week, Hunt Safely Week, and other special events.





Photo courtesy Lenze Studio, St. Marys

Special archery seasons, held in October exclusively for the bow and arrow hunter, have created tremendous interest. License sales have almost doubled in the past two years, over 10,000 archers taking to the woods in 1953 for a shot at a buck.

member of the Commission, by the sportsmen of Jefferson County honoring his service in the cause of conservation. The unique memorial consisted of three stones removed from a grist mill 100 years ago, each one symbolizing on outstanding conservation achievement.

FIELD ARCHERY

This sport is attracting more enthusiasts every year. From the record, it is obvious that modern day archers who hunt during the exclusive bow and arrow season are improving their skill:

Year	*Licenses Sold*	*Deer Kill*
1951	5,542	33
1952	8,446	24
1953	10,691	84

HUNTING BAN

A ban on hunting proclaimed by the Governor on October 30, 1953 due to extreme forest fire hazard was lifted on November 11 and a special extension for certain species of game was authorized during the week of December 22-27, Christmas day excepted. An extended season for ducks, geese, mergansers and coots was also declared from December 15 to 20, 1953, inclusive.

MEMORIAL

Conservation lost one of its most ardent supporters and the Game Commission lost one of its best friends through the passing, on May 26, 1954, of the Honorable Grover C. Ladner, former Judge of the Supreme Court of Pennsylvania. He spearheaded the clean streams program in Pennsylvania, was a leader in the Izaak Walton League, and was a past President and Director of the Pennsylvania Federation of Sportsmen's Clubs.

TRIBUTES

We feel that it is fitting and proper to cite as a part of this report recognition bestowed upon certain individuals for their outsanding conservation endeavors, especially when those efforts were made in the best interest of the Commission.

We should like to salute Laurence F. Blaney of Aliquippa, history instructor in the Aliquippa High School, for having won a special award from the Nash-Kelvinator Corporation for his outstanding work in teaching conservation education and administering a fishing and hunting club within the school.

We also salute John Mock, outdoor writer of the *Pittsburgh Press,* and William Everman (since deceased) of Springfield, Pennsylvania, both outstanding conservationists, for having been elected president and vice-president respectively of the famous Brotherhood of the Junglecock.

COOPERATIVE ENDEAVORS

The Teachers Laboratory at State College. Three workshops for teachers were held at the Pennsylvania State University during the period under consideration as follows with an aggregate attendance of 153.

1952	42
1953	44
1954	49
	135

Three Junior Conservation Camps supported by the Pennsylvania Federation of Sportsmen's Clubs were held at the Stone Valley Camp at Pennsylvania State University with an aggregate attendance of 492.

1952	158
1953	146
1954	188
	492

CONFERENCES ATTENDED

The Commission was represented at the following conferences:

International Association of Game, Fish and Conservation Commissioners
- September 1952—Dallas, Texas
- September 1953—Milwaukee, Wisconsin

North American Wildlife Conference
- March 1953—Washington, D. C.
- March 1954—Chicago, Illinois

Conservation Law Enforcement Chiefs Association
- September 1952—Westerly, Rhode Island
- June 1953—Rehobeth Beach, Delaware

Northeast Wildlife Conferences
- April 1952—Jackson's Mill, West Virginia
- September 1953—Bretton Woods, New Hampshire

National Association of Conservation Education and Publicity
- May 1953—Catlinburg, Tennessee

American Association for Conservation Information
- May 1954—Monterey, California

Outdoor Writers Association of America
June 1952—Miami, Florida
July 1953—Missoula, Montana
June 1954—Rolla, Missouri

Hunt Safely Clinic
May 1953—Toronto, Canada

LEGISLATION

A brief resume of the bills of interest to hunters of the Commonwealth, passed by the 1953 Legislature and approved by the Governor, follows:

Complimentary Hunting Licenses. Act No. 215, approved July 28, effective immediately, amends Section 304 of the Game Law by increasing the maximum number of complimentary hunting licenses which the Commission may issue from 25 to 100.

Additional Penalties for Killing Deer and Bear. Act No. 228, approved July 28, effective immediately, amends clause (q) of Section 731 of the Game Law by providing for mandatory denial of hunting and trapping rights for unlawfully killing a deer three years and bear five years, in addition to cash penalties now prescribed by the law.

Increasing Fee for Registering Firearms. Act No. 183, approved July 27, effective September 1, 1953, amends the Penal Code by increasing from fifteen cents to fifty cents the fee payable to County Treasurers for registration of firearms which hunting or fishing licensees desire to carry.

Liability for Costs not Paid by Defendant. Act No. 44, approved June 3, effective September 1, 1953, amends Section 1217 of the Game Law to provide that record costs not paid by the defendant shall be paid by the Pennsylvania Game Commission and not by the County as in the past.

Review of License Revocations. Act No. 45, approved June 3, effective September 1, 1953, amends subsection (6) of Section 315 of the Game Law by providing that petitions for review of license revocations shall be heard by the court of common pleas of the county of the legal residence of the licensee in the case of a resident and by the court of common pleas of Dauphin County in the case of a nonresident.

Erection of Antennas, Towers, etc., on State Game Lands. Act No. 201, approved July 28, effective immediately, amends Section 906 of the Game Law by permitting the Commission to grant "(8) Rights to erect, construct, maintain and operate antennas, towers, stations, cables and other devices and apparatus, helpful, necessary or required for broadcasting, telecasting, transmission, relaying or reception of television."

Miscellaneous Game Law Amendments. Act No. 284, approved August 19, effective September 1, 1953, amends the Game Law as follows:

(a) By adding a new section, 303.1, providing for the issuance of a special three-day license to nonresidents to hunt on regulated shooting grounds upon the payment of a fee of $3.15;

(b) By allowing appeals from acknowledgment of violations;

(c) By increasing the maximum license revocation period for a first offense from two to three years (clause (a), subsection (3), section 315).

(d) By repealing section 605 requiring tags before shipping raw furs to other states; and

(e) By increasing the penalty from $10.00 to $25.00 for failure or refusal to stop vehicle or conveyance upon request or signal of any officer in full uniform. (Clause (o), section 731).



Accounting and Service

HUNTING LICENSES

Pennsylvania's Wildlife Conservation Program is supported mainly by sportsmen through their hunting license fees. Additional revenue is received from other sources, such as penalties, special permits, timber sales and Federal Aid.

Conditions beyond the control of the Commission result in a fluctuation of the license sales from year to year. This makes it necessary to restrict programs to funds available. During 1953 there were 859,783 resident licenses sold, which surpassed previous records and moves the heretofore high license sale of 854,840 in 1948 to second place. The 32,042 nonresident licenses issued in 1952 exceeded former sales.

The State Department of Revenue handles all matters relating to the issuance of hunting licenses, including the settlement of accounts with agents and the transmission of monies accruing from this source to the Treasury Department for deposit in the Game Fund. The number of licenses issued during the past 5 years is given below:

	Resident		*Nonresident*		
Year	*Fee*	*Number*	*Fee*	*Number*	*Total*
1949*	$3.15	815,915*	$20.00	24,032	839,947
1950*	$3.15	808,171*	$20.00	26,001	834,172
1951*	$3.15	826,044*	$20.00	31,278	857,322
1952*	$3.15	830,779*	$20.00	32,042	862,821
1953*	$3.15	859,783*	$20.00	30,664	890,447

*Includes free Licenses issued to members of the Armed Forces and Disabled Veterans, as follows:

Year	Members of The Armed Forces	Disabled Veterans	Total
1949	5,581	275**	5,856
1950	5,898	325**	6,223
1951	15,317	378**	15,695
1952	#	632**	632
1953	#	646**	646

**Issuance of free licenses to Disabled Veterans authorized by the 1949 General Assembly.

#Issuance of free licenses to Members of the Armed Forces discontinued on and after August 12, 1952.

SPECIAL ARCHERY SEASONS

During the period covered by this report the Commission, acting under the provisions of the game law, as amended by the 1951 General Assembly, declared the second and third special archery seasons exclusively for antlered male deer from October 13 to October 25 inclusive in 1952 and from October 12 to October 24 inclusive in 1953. The keen interest manifested by the Robin Hoods the first year, 1951, when 5542 licenses were issued, has increased each succeeding year. The license sale of 8,446 in 1952 and 24 killed deer, and 10,691 in 1953 and 84 killed deer confirms this. It is obvious that the popularity of the sport will continue to increase.

NON-RESIDENT THREE-DAY SPECIAL REGULATED SHOOTING GROUNDS LICENSES

Under the provisions of the Game Law, as amended by the 1953 General Assembly, there were 605 Non-Resident Three-Day Special Regulated Shooting Grounds Licenses issued in 1953. The fee for this license, issued for three consecutive days, is $3.15. It entitles the holder thereof to hunt, take or kill on lawfully operated Regulated Shooting Grounds only, all wild birds and wild animals which may be legally hunted, taken or killed in this Commonwealth on such grounds, and to participate in a shoot held thereon under a regulated shooting grounds permit. Holders of Regulated Shooting Grounds Permits who apply and meet the necessary requirements are appointed agents of the Department of Revenue to issue these licenses.

HUNTING ACCIDENTS

As in previous years, every known educational and publicity medium was used to promote safe firearm handling on the part of every hunter who went afield. Unfortunately some accidents did occur. There will always be some gunning casualties, but without the intensified safety programs the number of injuries would no doubt be many more.

During the two year period there were 58 fatal and 871 non-fatal accidents. There was one fatality for every 30,228 hunters, based on the two year average of 876,634 gunners. A 30 year compilation (1924-1953) disclosed an average of 38 fatal accidents annually, 42.1% of which were self-inflicted. During this long period the average was one fatality for every 17,240 hunters, based on an average of 655,145 gunners.

The Commission commends all safe hunters and urges them to impart their wisdom and knowledge to the young or more inexperienced nimrods.



PGC Photo by Johns

Every known educational effort was made to promote firearms safety during this biennium. One of the best safety programs was conducted by Game Protectors and other Commission personnel at the Federated Sportsmen's Junior Conservation Camp near State College each summer.

LIST OF HUNTING ACCIDENTS DURING THE PAST NINE YEARS

	1945	1946	1947	1948	1949	1950	1951	1952	1953
Self-inflicted:									
Fatal	14	15	8	6	10	4	9	7	5
Non-fatal ...	36	66	66	67	71	69	86	78	79
Inflicted by others:									
Fatal	23	14	21	17	15	12	16	17	29
Non-fatal ...	196	271	360	351	382	380	300	284	430
Totals ..	269	366	455	441	478	465	411	386	543
Licenses Issued:	713,625	856,020	850,435	882,925	839,947	834,172	857,322	862,821	890,447

GAME KILL

Today more hunters measure their success in terms of wholesome outdoor recreation and good companionship, rather than by the size of their bag. Notwithstanding this trend the Commission must manage its program carefully and wisely to provide an adequate supply of wildlife to satisfy the fellows who pay the bill.

A quick summary shows that the kill of hares, squirrels, raccoons, wild turkeys, ruffed grouse, ringneck pheasants, wild waterfowl, woodchucks and doves, increased over the previous two-year period. There was a decrease in the kill of deer, bears, rabbits, Hungarian partridges (Season closed 1952 and 1953), quail (Season closed 1953), woodcocks, rails, gallinules and coots.

The kill of 6,225,289 pieces of game during this period, an increase of 492,171 over the previous two-year period, is most encouraging.

The figures on the big game kill are based on individual Game-Kill Reports while the small game kill is determined from estimates of field officers. The table below shows the kill by species and years:

Species	Season of 1952* Number	Season of 1953* Number
Deer, Legal Antlered	27,164**	37,384***
Deer, Legal Antlerless	37,829	16,252
Total Deer	64,993	53,636
Bears	261	303
Rabbits	1,227,383	1,398,132
Hares (Snowshoes)	3,454	4,237
Hungarian Partridges	(Closed)	(Closed)
Squirrels	666,672	771,772
Raccoons	106,995	129,258
Wild Turkeys	9,227	14,604
Ruffed Grouse	67,375	62,028
Ringnecked Pheasants	395,332	452,915
Quail	6,978	(Closed)
Woodcocks	12,520	10,225
Rails, Gallinules & Coots	5,299	4,037
Grackles (Blackbirds)	.....#	.....#
Wild Waterfowl	62,730	53,595
Woodchucks	281,194	332,167
Doves	15,274	12,693
Total Number	2,925,687	3,299,602

*Small Game, based on Field Officers estimates; Big Game, based on individual reports filed by hunters.

**Includes 24 Deer Killed during the 1952 Special Archery Season.

***Includes 84 Deer Killed during the 1953 Special Archery Season.

#Unprotected—No data.

ANTLERLESS DEER SEASONS

Deer, still too numerous for their food supply in many sections, required additional cropping and special antlerless seasons were established in 1952 and 1953 to accomplish that purpose.

Deputy Game Protector Galen McCullough, of Warren, checks a deer bagged by a youthful hunter during the 1953 antlerless season on the Allegheny National Forest.



1952 SEASON

The special season in 1952 was held December 15 to December 17 inclusive, following the buck season. Special Antlerless Deer Licenses, fee $1.15, were required.

The quota established for 66 Counties (Philadelphia County was excepted) was 224,660 of which 224,631 licenses were issued and 37,829 deer reported killed.

1953 SEASON

The 1953 season, held December 14 and 15, also followed the buck season. Special Antlerless Deer Licenses, costing $1.15 were required. The quota established for 66 Counties (Philadelphia County excepted) was 103,765 of which 103,754 licenses were issued and 16,252 deer taken.

Because each female deer is capable of producing from one to three fawns annually if well fed, there is produced in Pennsylvania each year a surplus which can be utilized fully for recreation without reducing the number of breeding animals for the following year. A large portion of this surplus is composed of antlerless deer. Unless most of these are taken by hunters or are killed in some other manner, the herd soon outgrows its food supply and large numbers starve during the winter. Damage to farm crops and young forest trees becomes a serious economic problem. Many thousands which are killed on the highways, shot for crop damage, or starve during the winter could supply enjoyable outdoor recreation for hunters. The Game Commission is convinced that a harvest of antlerless deer is desirable and necessary for the hunters benefit, for the state's economy, and for the deer themselves.

FINANCIAL OPERATIONS

The financial status during the period covered by this report is set forth on charts and detailed tabular statements which appear in the appendix.

During the first year the sum of $4,193,301.26 was credited to the Game Fund, the second year $4,410,444.98, or a total of $8,603,746.24.

Expenditures for the first year were $4,081,576.17, the second year $3,825,103.49, or a total of $7,906,679.66.

This is the second biennial period in which the financial operations were based on the increased license fees which became effective September 1, 1949.

The comparative figures below will be of interest:

Biennium	*Revenue*	*Expenditures*
1940-42	$3,309,727.38	$2,918,605.44
1942-44	3,068,006.83	2,427,912.20
1944-46	3,294,685.42	2,871,370.06
1946-48	4,726,918.63	5,326,214.28
1948-50	6,583,771.89	6,687,360.53
1950-52	7,943,986.22	8,277,399.82
1952-54	8,603,746.24	7,906,679.66

EARMARKED FUND

Under the provisions of the Game Law not less than $1.25 from each resident hunter's license fee shall be used for improving and maintaining natural wildlife habitat on land that is available for public hunting; the purchase, maintenance, operation, rental and storage of equipment used in this work; the purchase, distribution, planting, cultivating and harvesting of game foods; the purchase, trapping and distribution of all species of game;



PGC Photo by Parlaman

More money than the minimum required by law was spent during the past two years in improving wildlife food and cover. Game Protector Bill Overturf, Youngsville, is shown here cutting browse for deer, with the appreciated assistance of the Warren Field & Stream Club.

and protecting the property of Farm-Game Cooperators.

The table below shows the expenditures in relationship to the minimum amount required by law during the five years this program has been in operation:

Year Ending	*Expenditures*	*Minimum Amount Required*
May 31, 1950	$1,211,687.72	$1,012,573.75
May 31, 1951	1,266,856.18	1,002,435.00
May 31, 1952	1,095,938.26	1,012,936.25
May 31, 1953	1,163,287.09	1,037,683.75
May 31, 1954	1,247,584.35	1,073,440.00
Totals	$5,985,353.60	$5,139,068.75

$846,284.85 in excess of the minimum required by law was used to conduct this special program.

STATUS OF GAME FUND

The status of the Game Fund on May 31, 1954 (the end of the period covered by this report) was entirely satisfactory. The budget for the fiscal year June 1, 1954 to May 31, 1955 was balanced on estimated revenue plus $350,000 from the May 31, 1954 cash balance, leaving an adequate amount as working capital to supplement current revenue to finance the programs on a pay as you go basis from June 1 through September 30, when the funds from the new licenses became available.

CAPITAL INVESTMENTS

The table below gives the actual consideration paid for land purchased to date together with the estimated value of other items as of May 31, 1954:

State Game Lands (1920-1954)	$4,345,627.93*
Buildings on State Game Lands	128,250.00#
Game Propagation Farms (including land, buildings and equipment)	511,371.54#
Conservation School (including buildings and equipment)	32,336.40#
Equipment (including automobiles, trucks, tractors, graders, etc.)	194,638.86#
Total	$5,212,224.73

*Consideration paid for lands (including title and survey costs).

#Estimated value as of May 31, 1954.

Conservation Education

COOPERATIVE ENDEAVORS

CONSERVATION education has become a basic theme today, not only for the state and federal agencies which promote it, but for many private organizations and even industrial groups. Much has been accomplished in this field during the past two years.

Although active in conservation for years, the Boy Scouts of America selected as their theme for 1954 a "Conservation Good Turn," which was acclaimed all over the nation. The Commission and its personnel at both state and local levels aided Scout officials in developing many programs beneficial to wildlife. Many of the projects will be progressive through the year.

The Commission subsidized several worthy conservation projects among outside agencies, including the Academy of Natural Sciences, Philadelphia, $4,000; Carnegie Museum, Pittsburgh, $2,000; Future Farmers of America, $2,000; and the Forensic League of the University of Pittsburgh, $250.

The Commission contributed physical assistance and educational materials to the several summer sessions of the Conservation Education Laboratory for Teachers at Pennsylvania State University. More than 500 teachers, geographically distributed throughout the state, have graduated from this workshop in the nine years it has been in operation.

Cooperation was also furnished the Junior Conservation Camp sponsored by the Pennsylvania Federation of Sportsmen's Clubs, especially in safe gun handling, trapping and outdoor behavior.

Contacts were maintained with the Agricultural Extension Service at Pennsylvania State University in an effort to encourage more wildlife habitat improvement projects on the farm.

Liaison was maintained with the Pennsylvania Federation of Women's Clubs and the Garden Clubs. All affiliated clubs received packets of free literature for use in promoting educational programs locally.

A broad survey of Pennsylvania's schools, colleges and universities indicated that conservation education is being taught extensively. Results of the survey were turned over to the Department of Public Instruction for consideration.



PGC Photo

The Commission's permanent, museum-type exhibit at Hershey attracted thousands of visitors each summer. Skilfully designed displays emphasize important conservation education lessons.

EXHIBITS

The Commission's two permanent, inanimate wildlife exhibits—Pymatuning Museum, Linesville, Crawford County and Hershey, Dauphin County—attracted more than a million persons each year during the biennium. The former, located on the famous Pymatuning Waterfowl Sanctuary, contains one of the finest collections of mounted waterfowl and shorebirds to be found anywhere.

The Hershey exhibit, with its displays of good and bad conservation practices, was further augmented by two new habitat groups, including a beaver family and an albino deer group. A display of waterfowl including several swans and geese; the Bald and Golden eagles; the ruffed grouse, Pennsylvania's State game birds; Pennsylvania songbirds; a safe firearms display; and one portraying protection against snakes completes the exhibit. Live snakes are a part of the exhibit, including rattlesnakes, copperheads and blacksnakes.

Major statewide exhibitions attended by the Commission included the State Farm Show, Harrisburg; The Philadelphia Motor Boat and Sportsmen's Show, Philadelphia; the Allegheny Free Fair, Pittsburgh. These are all live displays in which the birds or animals exhibited are shown in relation to their economic and recreational values.

A colorful exhibit of mounted game birds and animals, hawks, owls, songbirds and snakes were assembled into small 16″ x 20″ dioramas with painted backgrounds and indirect lighting. These novel displays were used widely as token exhibits for county fairs, sportsmen's field days, and other events.

GAME NEWS

The Pennsylvania Game News, official monthly publication of the Commission, maintained the same standards of text and format which have gained it state and national acclaim. In April, 1954 a Silver Anniversary Issue was distributed to commemorate the magazine's 25th year of publication.

This issue contained certain educational text which is being reprinted for use in the schools.

Special GAME NEWS issues of direct value to the farmer and sportsmen included "The Predator Question," published in September, 1952; and "Food and Cover For Farm Wildlife," published in March, 1953.

Six special articles, dealing with the Commission's program of wildlife restoration under the terms of the federal Pittman-Robertson Act, were published in 1954. These features, including a detailed map showing locations of food and cover development areas, appeared in the February through August issues of the magazine.

PUBLICATIONS

Publications of the Commission, which are presently available, may be obtained at the following rates:

Pennsylvania GAME NEWS	1 year	$1.00
	3 years	2.50
Birds of the Pymatuning Region		1.00
Pennsylvania Birdlife		.50
Pennsylvania Wildlife		.25
My Land and Your Land		.50
Farmer & Wildlife		.25
The Sportsman's Guide to Wild Ducks		.25
Sportsman's Map of Pennsylvania		.15

The Commission published 10,000 sets of four new color charts including the owls, songbirds, game animals and furbearing animals. Reprints also were obtained of the original four charts on the winter birds, summer birds, game birds and the hawks of Pennsylvania. The cost per each set of four is $1.50.

MOTION PICTURES

Several sound and color motion pictures were produced as follows:

HOW TO SHOOT THE BOW—16mm sound on color—approximately 15 minutes. Released October 16, 1952. Instructional film depicting the use of the target and hunting bows.

Members of the Farrell Sportsmen's Club, Mercer County, enjoy an evening of educational films provided by the Game Commission.





Photo by C. Paul Blair

Commission representatives attended many local fairs and exhibits, usually with token displays of Commission publications and other educational material.

THE RIGHT WAY TO HUNT—16mm sound on color—with black and white release prints, of approximately 7 minutes, for TV use. Released October 27, 1952. This is a documentary film on handling firearms used in small game hunting. It emphasizes the acts of vandalism to be avoided while hunting on private property.

SHARP-TAIL GROUSE RELEASE—16mm black and white spot news TV short. Released April 9, 1953. This portrays the stocking of sharp-tailed grouse in two selected counties, McKean and Elk, in northwestern Pennsylvania.

PENNSYLVANIA'S DEER PROBLEM—16mm sound on black and white release print, approximately 7½ minutes. Released December 8, 1953. This film portrays the life history and management of the deer.

CONSERVATION AT WORK—16mm sound on color film approximately 25 minutes. Released December 27, 1953. A major documentary film highlighting the Commission's wildlife management activities. Seventy-five per cent of the film is devoted to excellent wildlife pictures.

Public Relations

The Game Commission continued effective public relations methods used in the previous biennium. In general, Commission personnel contributed much to the program.

Through attendance at meetings with sportsman and service clubs, the presentation of wildlife programs before school assemblies, and cooperation with youth groups, division education officers and game protectors brought the conservation message to many thousands of Pennsylvanians in the past two years.

Meetings with outdoor writers, broadcasters and leading sportsmen by Commission personnel brought about a greater understanding of the state's wildlife management problems. Many of them were supplied with literature and other educational aids to insure maximum cooperation.

The weekly Newsletter which is sent to the press, radio and other news mediums, continued to keep the public well informed on wildlife matters.

The Commission's Field staff set a fine record during the biennium in working with schools, newspapers, radio and TV stations, and other interested individuals and organizations. Some of the special contacts included meetings with the following:

Columnists	350
Editors	194
Radio Personnel	135
TV Personnel	93
Colleges	55
High Schools	428
Jr. High Schools	116

The Ross Leffler School of Conservation

May 25, 1952, marked the beginning of a new avocation for seventeen young Pennsylvanians, most of whom were destined ten months later to become qualified Game Protectors.

Carefully selected as a result of highly competitive examinations and qualifying requirements from among Deputy Game Protectors and Food and Cover Corpsmen commissioned or employed prior to January 1, 1952, twelve of the trainees completed the intensive course of classroom and field instruction at the Ross Leffler School of Conservation on March 28, 1953, and with equal vigor and determination, have completed the year long probationary employment. They are now successfully filling the gaps in the Commission's field service as regular employees.

Carefully selected and trained, this Seventh Student Officer class was graduated from the Ross Leffler School of Conservation at graduation ceremonies in Harrisburg on March 28, 1953.





PGC Photo by Cady

An intensive live-trapping and tagging study has been conducted by the Commission's Research Division in recent years to discover the causes of mortality among juvenile cottontail rabbits during the summer months. Here Research Project Leader Glenn Bowers removes a rabbit from a trap for weighing, ear tagging, and subsequent release.

Wildlife Research Division

SCIENTIFIC wildlife management is based upon facts discovered through study and experimentation. The Wildlife Research Division is the experimental and fact-finding group of the Game Commission. Its first function is to furnish information which, when properly utilized, will provide better hunting for the sportsmen of Pennsylvania and better protection for all desirable wildlife. And its second obligation is to see that this management of the state's wildlife is carried out as efficiently and economically as possible.

Within the past two years many research studies have been undertaken and several have been completed. Some have been financed with Pittman-Robertson funds, wherein the Federal Government paid seventy-five per cent of the cost; others have been financed entirely with Game Commission funds; and still others have been contributed by the Pennsylvania Cooperative Wildlife Research Unit at State College.

Biological investigations for the biennium include the following:

1. Cottontail Rabbit—In an effort to evaluate the present rabbit trapping and transfer program, over 11,000 of the cottontails live-trapped in cities, parks, propagation areas, and other closed areas were ear-tagged. This was done to determine the distance travelled, the length of life, and the number taken by hunters during the following hunting seasons.

In addition, an intensive live-trapping and tagging study was undertaken to discover the causes of mortality among juvenile cottontails in summer. Diseased and parasitized animals were examined in a laboratory.

2. *White-tailed Deer*—Pennsylvania's deer herd poses an unusual problem in wildlife management. Game managers are normally faced with the problems of increasing the numbers of a game species, but, in the case of the deer, their principal problem has been to decrease the herd to a point commensurate with its natural food supply. The present project is designed to provide factual information to be used for the scientific management of this important game animal. It is necessary to know the distribution and relative abundance of deer in different parts of the state so that they can be harvested in respect to their numbers. It is essential to know the effect of poor food conditions upon the body weight, antler size, reproduction, and health of the deer. Also, it is imperative to evaluate the damage by deer to farm crops and forest growth. These and many more economic and biologic facts concerning deer in Pennsylvania are being collected for guidance in managing the herd.

3. *Wild Turkey*—The intent of this study is to reappraise the range and show the distribution of wild turkeys on maps; to determine why wild turkeys have declined on the long-established range of south central Pennsylvania; to determine the value of farm-reared birds in management; and to investigate the practicality of using artificial insemination as a means of producing better quality birds at the Wild Turkey Farm at reduced cost. The recent expansion of the wild turkey range to almost all parts of the state has placed even greater emphasis upon the importance of this bird for recreation. Continuing research studies are necessary for sound management.

4. *Woodcock*—The life of woodcock coverts appears to average about fifteen years. After this time, the alder, aspen, or sumac usually shade out the ground cover and make the area undesirable for these birds. The principal function of this study is to determine the procedures necessary to restore these "worn out" coverts to productivity. Also, constant checks will be made of population changes, causes of mortality, seasonal movements, and other factors of importance to proper management.

5. *Evaluation of Wildlife Food Production Program*—A survey of all plantings, cuttings, thinnings, and other food production efforts by Game Commission personnel is being made. This study is intended to sort out the effective practices so that they can be stressed, and the ineffective ones discarded. Also, it is intended to eliminate various inefficient practices and techniques involved in producing food for wildlife.

6. *Management of Rights-of-Way for Wildlife*—The several hundred miles of power line and pipe line rights-of-way cut through the forests of Pennsylvania, if managed properly, can produce thousands of acres of top-quality food and cover for wildlife. This study is designed to determine the best plants, either native or cultivated, for this purpose.

7. *Experimental Management of the Conemaugh Reservoir Area*—This 6800 acre tract in Indiana and Westmoreland counties is being used to study land management techniques for wildlife, the effects of hunting pressure on the various game species, and the population dynamics of the resident wildlife. Many of the current management practices of the Commission will be tested for their effectiveness in game production on this area.

8. *Other miscellaneous studies* includes: (a) the need for brightly colored hunting clothing is indicated by the hunting casualty record each year. Sitting woodchuck hunters are shot through the head because their hatless head resembles the body of a woodchuck. Small game and big game hunters are shot in mistake for game or because they are not readily visible. Ex-



PGC Photo by Cady

The main objective of the Commission's current woodcock research study is to produce better hunting. Knowledge of the bird's habitat requirements, life history and movements is necessary for that result.

periments are being conducted to determine the colors which contrast best with natural backgrounds, and colored movies and slides are being prepared to demonstrate the value of this brightly colored garb in hunting safety. (b) An examination of several hundred wings and tails from grouse shot by hunters to learn the age and sex of the fall population. This provides direct evidence concerning the success of the past hatching and rearing season, and indirectly the status of the grouse cycle. (c) Numerous examinations are being made of diseased animals, especially foxes, deer, grouse, cottontails, raccoons, and wild turkeys. (d) Constant efforts are being made to improve the efficiency or effectiveness of the wildlife management program in the state. Methods and techniques are being developed continually to provide better hunting and better protection to wildlife at less cost.

COOPERATIVE STUDIES

The Cooperative Wildlife Research Unit at The Pennsylvania State University conducts studies in cooperation with the Wildlife Research Division. Those currently in force are: (1) A study of the Parisitological, Pathological, and Biochemical Factors Affecting the Grouse Cycle; (2) An Analysis of the Factors Responsible for Antler Growth in Deer; (3) A study of Fertilizer Treatments on Beech and Various Oaks to Determine Any Increase in Mast Production; (4) A Study of the Flowering and Post-Flowering Periods of the Oaks, Hickories and Walnuts with Reference to the Forecasting of Mast Production; (5) A Study of Ruffed Grouse in the Barrens, Centre County; (6) Cottontail Population and Mortality Study; (7) The Biology and Ecology of the Gray Squirrel in Pennsylvania; (8) An Ecological Survey of the Ring-necked Pheasant in Pennsylvania; (9) Waterfowl Investigations on Conneaut Marsh; (10) Utilization of Mast by Various Rodents; (11) Effects of Forest Cuttings with Respect to Tree Growth, Mast Production and Wildlife Usage Correlated with Edge Effect.

BUREAU OF WILDLIFE CONSERVATION



Land Utilization Division

GAME MANAGEMENT AREAS ACQUIRED

The acquisition of Game Lands for wildlife conservation and public recreation has been the Commonwealth's greatest insurance policy against game scarcity and human monopoly.

The aggregate acres of State Game Lands acquired since the program started in 1920 has reached a total of 905,743, comprising 198 units, distributed through 63 of the Commonwealth's 67 counties. An additional 734 acres were under contract for purchase at the end of the biennium.

The consideration paid for the 905,743 acres amounted to $3,446,709.60, a general average of $3.70 per acre. This does not include expenditures for securing options, land examination, title abstracting and conveyancing, boundary line surveys, mapping and incidentals.

During the two-year period under consideration a total of 6,685.1 acres was acquired by purchase or transfer at an outlay of $85,762.90.

Probably the most important and by far the largest acquisition made was 3,781 acres in Monroe County, on which a new Game Lands, No. 221, has been established. The area is in the Poconos, close to heavy centers of population, and constitutes a desirable addition to the state-wide system of public hunting and fishing grounds.

FIXED CHARGES IN LIEU OF TAX

Commonwealth owned lands are exempt from taxation but the Commission pays annually a fixed charge of 7½ cents for each acre of Game Lands and Game Farms it acquires. Two and one-half cents each are paid to the county treasurer, the township school directors and the township road supervisors for every acre acquired in the respective counties and town-

ships. Fixed charges are paid during calendar years and 64 counties received $67,045.40 and $67,175.11 respectively during 1952 and 1953. A grand total of $912,050.78 has been paid on Game Lands and Game Farms since lands were first purchased by the Commission.

AUXILIARY GAME REFUGE PROJECTS (General Classification)

The number of Auxiliary Projects decreased from 27 to 19, with a net loss of 2,620 acres. The 19 projects contain a total of 19,658 acres, of which 4,540 acres are maintained as refuges and 15,118 acres are open to hunting.

GAME PROPAGATION AREAS

Game Propagation Areas decreased from 283 to 258 in number and from 54,456.49 acres to 50,962.79 acres, including 254 rabbit farms, initially authorized by the Commission on October 6, 1949, containing 29,240.07 acres.

SPECIAL PRESERVES

Ten dog training projects, having a total area of 6,378.3 acres, have been in operation, although project No. 11 in York County will soon be discontinued.

Two Archery Preserves established in 1937, the maximum permitted by law, were maintained during the biennium on 1685 acres.

SPECIAL WILDLIFE PROJECTS

New projects were established and others were discontinued. The records indicate that 96 projects, totaling 30,661.5 acres, were operative at the end of the biennium.

SUMMATION OF ACREAGE IN LAND MANAGEMENT PROJECTS

Lands either owned or under nominal control of the Commission and used for game management projects of various types, including Game Farms and primary refuges located within State Forests and other public lands, aggregated 2,055,660.24 acres, a decrease of 2,552.2 acres.

State Game Lands, open to public hunting, have attracted an ever increasing number of hunters during game seasons. Bear hunters parked these cars near the gate of State Game Lands Number 14 for the 1952 opening day.

PGC Photo by Batcheler



EASEMENTS GRANTED

Eighty-eight easements, mostly for rights-of-way for oil, gas, electric and telephone lines, comprising 365 acres across Game Lands and Game Farms, were granted. The Commission received $15,860.95 for forest growth cut on these areas. Rentals paid for all existing rights-of-way totaled $16,203.45.

COOPERATIVE FARM-GAME PROGRAM

This successful Program covered 1,040,144 acres at the end of the biennium. It included 167 projects consisting of 10,283 farms. Since funds limit this program to approximately 1,000,000 acres, nearly all of which was leased at the end of the previous biennium, little expansion was made during the past two years. Cancellations were made in some instances and agreements were executed with new owners in other cases.

Meetings

Project personnel participated in 309 meetings with sportsmen, farm groups and Soil Conservation Districts attended by 15,767 persons. They also attended 235 in-service training meetings.

Farmer Contacts

During the two year period, the following contacts were made:

By District Game Protectors	17,833
By Food and Cover Corps	34,745

Refuges

The following refuges were established, maintained or removed:

a. Established—83, containing 1,027 acres
b. Maintained—1,545, containing 14,291 acres
c. Removed—122, containing 1,284 acres

Safety Zones

A total of 27,921 safety zones were established or dismantled.

Posting of Safety Zone signs on Cooperative Farm-Game Projects has always been a major factor in keeping farms open to public hunting. Every effort is being made to educate hunters on the necessity of observing this important provision of the law.



Wildlife Management and Soil Conservation Practices

Despite the fact that the program was not expanded to any major extent, much was accomplished on the farms to improve conditions for wildlife. For example, field personnel assisted project cooperators in establishing the following:

1. *Contour Strips*—6,393 acres surveyed.
2. *Seedlings*—Distributed to farms and planted by cooperators:

a. Coniferous	1,702,221
b. Multiflora Rose	856,300
c. Other Species	152,406
Total	2,710,927

3. *Seedlings*—Planted by Commission personnel:

a. Coniferous	72,985
b. Multiflora Rose	410,100
c. Other Species	33,764
Total	516,849
Grand Total—All Seedlings	3,227,776

4. *Food strips*—The following game food strips and nesting cover were purchased from cooperators:

1,416 strips containing 317 acres
Planted by Commission personnel:
124 strips containing 96 acres

5. *Wildlife borders*—Personnel increased game food and cover along woodlot edges by establishing the following wildlife borders:

Cut	331,759	Lin.	Ft.	25	Ft.	Wide
Planted to shrubs	45,826	"	"	"	"	"
Seeded to lespedeza	11,202	"	"	"	"	"

6. *Farm Ponds*—Technical assistance and advice was furnished on the following farm pond sites:

a. Investigated	130
b. Recommended	111
c. Completed	92

7. *Field Drainage*—Drainage of suitable areas on poorly drained soils provides additional wildlife nesting sites. Advice and technical guidance was furnished in the construction of 190,219 linear feet of drainage which improved 1,353 acres.

8. *Pasture Improvement*—Cooperators improved 2,415 acres of pasture on the advice of Commission employes.

9. *Diversion Ditches Surveyed*—126,623 linear feet which will improve 2,373 acres.

10. *Woodland Management*—Furnished management advice on 2,791 acres.

11. *Material distributed to cooperators*—

Crow Repellent—4,041 pints. This aided materially in preventing crow, blackbird and pheasant damage to corn.

Rye grass seed—68,602 pounds. This seed was furnished to cooperators engaged in contour strip farming and was to be seeded at the last cultivation of corn to provide food and cover for wildlife.

12. *Other Practices*—Eight acres of crabapple trees were released by felling competitive tree growth. Forty (40) fruit trees were pruned. Thirty-seven (37) acres of food strips (clovers) were mowed, limed and fertilized. In addition 2,650 linear feet of multiflora rose hedge was fertilized.



PGC Photo by Cady

More than 112,000 cottontail rabbits, live-trapped in urban areas where they cause considerable damage and cannot be hunted, have been released on land open to public hunting in the past two years.

Game Stocked

The following wildlife was released on project areas:
Rabbits–22,412–pheasants 128,026–quail 6,255–wild turkeys 119–squirrels 88–ducks 289–Total, 157,189.

Game Killed

Rabbits 363,082–pheasants 152,780–quail 607–squirrels 135,753–woodchucks 52,942–grouse 11,356–woodcock 1,407–wild turkeys 50–waterfowl 6,901–doves 713–Total, 748,579.

Predators Removed

Red foxes 4,710–weasels 2,206–raccoons 7,023–grey foxes 4,862–opossums 12,123–hawks 2,289–owls 540–others (stray cats, crows, etc.) 10,063–Total, 43,816.

Number of Hunters Using Projects and Man Days Hunted

Number of hunters	418,890
Man Days hunted	787,191

Hunting Accidents

A total of thirty-eight (38) accidents occurred on project areas–three (3) fatal and thirty-five (35) non-fatal.

ENGINEERING UNIT

Field Work

Boundary surveys were completed on 6 tracts under contract for purchase, totaling 5762.8 acres, increasing the total length of State Game Lands boundaries to approximately 4127 miles.

Fourteen miles of boundaries were resurveyed to settle adverse claims.

Five hundred and twenty miles of boundary lines were retraced and

marked. Property corners were rebuilt and replaced where lost or destroyed.

Forty-six miles of roads were surveyed for locating and mapping food plots.

One Primary Refuge on State Forest Land was surveyed for a boundary revision.

Sixty-four marsh pond sites were examined, of which thirty-one, totaling 281 acres, were surveyed and mapped. Nine sites have been approved, seven of which are under construction. One pond was nearly completed at the end of the biennium.

Office Work

Twelve additions to the Game Lands were plotted, traced, areas calculated and deed descriptions prepared. Warrant data was abstracted and plotted and survey information prepared for the abstractors and surveyors.

Fourteen tracings of Game Lands which had become damaged or obsolete were revised and retraced.

Twenty-six county maps were drafted for the GAME NEWS and thirty-three small scale maps of the Game Lands were prepared for public use.

Plans and estimates were prepared for twenty-one marsh pond dams, the Conneaut Marsh dam and the Lower Woods Pond dam.

One hundred and eighty farms were mapped and printed for the Farm Game Program. Numerous changes in ownerships on the various projects required twenty new tracings.

Drawings were also prepared for two buildings, five Propagation Areas, fifteen Rabbit Farms and numerous right-of-way agreements, graphs, signs, posters, charts, etc. for other units of the Commission. Aerial photographs of the Game Lands were enlarged and prepared to indicate food and cover improvements. About 10,000 square yards of maps and drawings were reproduced on our printing machine to furnish maps and plans to the field officers and others.

Federal Aid Projects

Food and Cover Development Project—Planning Segment

During the first year of the biennium the Federal Aid Food And Cover Development Project prepared detailed plans, including both written specifications and maps, for the development and management of 16 Game Lands.

During the following year the plans were simplified to expedite the program and enlarged aerial photographs were used for the base maps on which the essential food and cover features are shown without the written specifications. At the end of the biennium plans for an additional 23 Game Lands had been completed, or a total of 39.

FOOD AND COVER PROGRAM

Annual maintenance on all owned and leased lands, with the exception of Cooperative Farm-Game Projects, included over 4,000 miles of boundary line; 1,013 miles of equipment roads; 622 miles of fire trails; and refuges and special areas totaling over 138,300 acres. Proper upkeep is essential if respect of the public is to be expected.

Twenty (20) miles of equipment roads were built to provide access to food strips, and three (3) miles of fire trails constructed to increase protection in forested areas. In addition, four (4) storage sheds and eight (8) corn cribs were constructed to store farming equipment and various harvested grains. Commission owned buildings and equipment were kept in repair.

Management of Food Strips and Open Field Areas

During the biennium 780 acres of forest area or reverting fields were cleared; 5,400 acres were planted to grains and 3,525 acres were seeded to clovers and other cover crops to improve habitat for wildlife. Over 33,600 bushels of surplus grain were harvested from large food strips and fields and fed to wildlife at other locations.

Grazing and nesting sites on old field areas were improved by mowing 6,070 acres, fertilizing 1,340 and liming 2,550 acres, thus greatly benefiting these game management areas.

Sharecrop farming on State Game Lands continued. More than 3,750 acres were planted to grains and cover crops by adjoining farmers, the Commission's share amounting to 17,250 bushels of harvested crops and 150 acres of standing grains. Soil conservation practices and proper crop rotation were followed when farming these lands, thus improving the crops and conserving soil and water. Through application of these practices, many lands became local demonstration areas.

Purchase of food strips on private lands provided supplemental food on farms open to public hunting. Under the program, 985 strips of standing grains and grasses, totaling over 350 acres were reserved for wildlife, improving areas previously stocked by the Commission.

Timber Sales and Forest Cuttings

The sale of forest products improved food and cover for wildlife on over 5,500 acres of State Game Lands. These sales provided a cash return of $83,736.05. Products removed included 3,621,000 board feet of sawtimber; 2,590 tons of mine timbers; 10,500 cords of paper and chemical wood; 176,200 posts and props and 15 cords of firewood.

During the period, office and field personnel cooperated with the United States Forest Service in conducting a Timber Resource Review on State Game Lands where timber had been harvested during the past few years. Thus was a study of fifty-four sample plots in the four timber types, to determine the sprout growth and reproduction that follows various cuttings and how future timber resources will be affected by the age, diameters and number of trees on each acre cut by the timbermen. Reproduction rating and method of cutting timber from Game Lands were classed as good under the procedures outlined by the Timber Resource Review. Field data sheets and records were submitted to the designated United States Forest Service Representative in May, 1954.

In addition to the areas of Game Lands improved for wildlife by selling timber, over 3,100 acres were developed for forest game species through other types of cutting. Treatment included releasing food producing trees, shrubs and vines by felling overshadowing tree growth; thinning timber stands; felling all trees on small blocks to provide low, dense game cover; pushing over inferior tree growth with bulldozers; and releasing scattered apple trees. Over 21,000 apple trees were pruned. Game on approximately 12,500 surrounding acres benefited from these operations.

Wildlife derives a decided benefit from woodland border cuttings, which involve the felling of large trees on a narrow strip along woodland and field edges. During the biennium, removal of trees for an average width of 39 feet along 1,134,400 linear feet of woodland border provided additional food and cover for wildlife by stimulating growth and fruiting of native plants. At the same time removal of these shade trees increased crop production on adjacent fields.



PGC Photo

Almost two million seedlings were distributed from various Commission nurseries for wildlife food and cover plantings during the past two years. Here officers of the Northwest Division receive such a shipment and prepare to quickly get them "in the ground."

Seedlings and Transplants

More than 1,721,000 tree, shrub and vine seedlings were planted to improve food and cover for wildlife on over 1,700 acres of Game Lands and leased areas.

Nursery Management—State Game Lands

At the height of production, thirteen (13) small seedling nurseries, totaling 11 acres were in operation on State Game Lands. Over 1,726,000 seedlings were distributed from these areas to supplement seedlings purchased for planting on Cooperative Farm Game Projects. Approximately 615,000 seedlings remain in nursery beds for distribution in 1955, at which time these small nurseries are to be discontinued in favor of one large nursery at Howard.

Howard Nursery

This seedling nursery, purchased and formerly operated by the United States Soil Conservation Service and later managed by the Pennsylvania Department of Forests and Waters, was leased by the Pennsylvania Game Commission, from the United States Government, effective January 1, 1954. A Superintendent has been appointed to plan operations, grow and distribute seedling stock required in future Commission programs.

During the last quarter of the biennium 944,000 surplus seedlings, remaining in the nursery, were given to interested conservation organizations for wildlife plantings on private lands. An additional 510,000 seedlings were distributed to Commission employes for use on approved projects. The remaining stock, which totals 753,500 seedlings, will be shipped in 1955. Approximately 1,000 pounds of tree and shrub seed has been planted to produce seedlings for future use.

Waterfowl Management

Sixteen small ponds or potholes were constructed. Ten, totaling one acre, are located on Game Lands, and six totaling 6.3 acres were constructed on

the Allegheny Forest. These provide additional feeding and resting areas for wild ducks and geese.

Waterfowl habitat was improved by planting 2,600 pounds of wild duck millet and approximately 30 bushels of duck meat plants. These plantings increased the available food and cover on over 200 acres of marsh and water areas.

SMALL IMPOUNDMENT PROGRAM

As a supplement to improvement of existing marsh areas, the Commission approved a Small Impoundment Program, which provides for the construction of dams near the headwaters of streams located on State Game Lands and other public lands. In order to obtain the most effective utilization of these small lakes, the program at present is confined to the Northwestern portion of the State. This groups the water areas and utilizes Game Lands that are best adapted to waterfowl development. Later the work will be extended to other desirable sites.

During the biennium thirty-one sites which will provide over 330 acres of water area, were surveyed. Plans were prepared for twenty-three of the impoundments. One dam, which will flood 8.5 acres, was completed on Game Lands No. 28 in Elk County. Construction was started on three additional impoundments. As the dams are being constructed food and cover corps employes clear plots along the future shoreline to improve aquatic growth and provide open areas on which small food strips will be planted. Islands are constructed to provide nesting and resting sites for wild waterfowl.

Game Management License—Conemaugh Reservoir

A Game Management License was executed on December 4, 1953 between the United States Government and the Commission, granting the latter the right to manage wildlife on specified portions of the Conemaugh Flood Control Reservior area in Indiana and Westmoreland Counties.

A general plan for management and research was prepared by employes of the Commission's Research Division. This program provides for development of food and cover and detailed studies of many wildlife problems. In addition to management for upland game, the plan includes impoundments to increase feeding and resting areas for wild waterfowl and management to improve these sites.

Numerous small impoundments are being constructed in an effort to improve waterfowl habitat in Pennsylvania





PGC Photo by Don Miller

This mechanical tree planter, similar to ones used by the Commission, was purchased by the Berks County Chapter, Izaak Walton League of America. In an effort to encourage wildlife plantings on privately owned land, the League has made the planter available at a nominal fee. It is especially useful in planting evergreens and multiflora rose.

Wildlife Development—Allegheny National Forest

Under a cooperative agreement with the United States Forest Service, approved February 1, 1950, the Commission manages wildlife on the Allegheny National Forest.

During the biennium two crews, one operating in Forest County, and the other in Elk and McKean Counties, cleared 38 acres for food strips; planted 63 strips totaling 96 acres to grains; seeded 79 strips totaling 133 acres to clovers and grasses; improved nesting cover and clover growth by mowing, liming and fertilizing approximately 250 acres of field areas; planted 1,500 evergreen tree seedlings and 300 shrub seedlings; constructed and maintained one mile of equipment roads to gain access to food strips.

In addition to the above, game food and cover around plantations, along equipment roads and woodland edges were improved by felling large trees for an average width of 45 feet along over 84,400 linear feet of these woodland borders. Existing native shrubs, released by this operation will produce an abundance of fruit. Thousands of other shrubs and apple trees were released when competitive tree growth was felled on over 330 acres. Two-hundred and twenty (220) fruit trees were pruned. As noted under waterfowl management, six small impoundments totaling 6.3 acres were created on the Allegheny National Forest.

This wildlife development work deserves and receives much enthusiastic praise from local and visiting sportsmen. Plans are now being made to extend various phases of the plogram to that portion of the Allegheny National Forest located in Warren County.

Federal Aid Projects

The Federal Aid in Wildlife Restoration Act provides that the United States Government will finance seventy-five percent of approved wildlife



PGC Photo by Parlaman

Game Protector Dave Titus, of Warren, shows interested sportsmen some of the food and cover development work on State Game Lands No. 29. Much of this important program has been accomplished under the terms of the Federal Aid in Wildlife Restoration Act.

management projects. Since a large percent of such activities are located on State Game Lands, reports of various projects are presented as follows:

"Forest Wildlife Development"—This project which became effective October 1, 1947, provided for the improvement of wildlife habitat through selective forest cuttings and thinnings on Game Lands No. 25, Elk County. Activities were discontinued on June 30, 1953.

A completion report was prepared and submitted to the United States Fish and Wildlife Service. Personnel employed to selectively cut and market timber under provisions included in the project, treated 810 acres during the period. Improved food and cover for wildlife now supports increased numbers of deer, ruffed grouse, wild turkey and other forest game species. With this forest development has come a very noticeable increase in hunters and resulting game harvest.

"Impoundment—Lower Woods Pond"—This project was approved to rebuild the old dam breast at Lower Woods Pond on Game Lands No. 159, Wayne County.

Although preliminary surveys were completed and construction started on the dam, work was discontinuel September 9, 1953.

The project was officially cancelled by the United States Fish and Wildlife Service, March 31, 1954.

"Conneaut Marsh Impoundment"—On May 11, 1954, the United States Fish and Wildlife Service approved a project to construct an impoundment on Conneaut Marsh, Game Lands No. 213, Crawford County. The raising and resurfacing of two thousand feet of State highway and the construction of a mechanical spillway will control water levels and flood 550 acres of the marsh, greatly improving the area for wild waterfowl.

Governor John S. Fine has agreed to officiate at the ground breaking ceremonies, scheduled for June 25, 1954. Although financed by the Commission, the Pennsylvania Department of Highways will cooperate by elevating the highway during the summer of 1954. Contracts will be awarded to a private engineering company for construction of the mechanical spillway.

"Food and Cover and Farm Game Development"—The preparation of food and cover management plans; execution of all food and cover development work; and the leasing, mapping, establishing and developing of Cooperative Farm-Game Projects are partially financed by this project. A Coordinator is employed to service purchases, payrolls and reports and standardize practices in the field.

Accomplishments under the Farm-Game Cooperative Section, the growing of tree, shrub and vine seedlings on Game Lands and in the Howard Nursery, and the Food and Cover Development work which has been summarized in preceding pages, are credited to this Federal Aid in Wildlife Restoration Project.

Winter Feeding and Miscellaneous

Severe winter weather is often a factor responsible for reduction in forest and farm game populations. To offset this, it is necessary to place large amounts of harvested grain in sheltered areas during winter months. Over 72,000 bushels of corn and other grains were distributed by Game Commission employes. An additional 29,000 bushels were given to conservation organizations, boy scouts, 4-H clubs, etc., for use in local game feeding projects. Commission employes purchased and distributed over 114,400 pounds of salt to locations where deer will utilize it as a necessary supplement to their diet.

Miscellaneous activities included repair and erection of duck nesting boxes, cultivation of over seven miles of multiflora rose hedge, transplanting two bushel of watercress to spring runs; fertilizing and pruning chestnut orchards, hedgerows, and miscellaneous shrubs and the collection of asiatic chestnuts and seed of native shrubs for planting in Commission nurseries.

Field personnel helped suppress 33 forest fires which burned 3,200 acres of State Game Lands and 1,700 acres on nearby private lands. District Game Protectors helped employes of the Pennsylvania Department of Agriculture locate trees affected by the Oak Wilt. Cooperation was extended to other State and Federal Agencies.

Winter feeding, although sometimes necessary, is a big and costly job. Over 72,000 bushels of corn and other grains was distributed by Commission employees while an additional 29,000 bushels was given to interested organizations and individuals during the past two years.



Wildlife Protection Divison

RECORD OF LAW ENFORCEMENT

Enforcement of the Game Laws during the past two years was vigorously pursued. We continued to secure a high rate of convictions as compared with acquittals on cases appealed to the Courts of Quarter Sessions, indicating the soundness of the prosecutions and the thorough manner in which the cases are investigated and prepared.

TEN-YEAR SUMMARY

Fiscal Year	*Number of Prosecution*	*Penalties Collected*
1944-1945	1,831	$ 51,687.65
1945-1946	2,168	63,188.00
1946-1947	4,030	136,697.75
1947-1948	4,251	130,055.75
1948-1949	4,825	148,925.80
1949-1950	6,107	200,888.35
1950-1951	4,249	136,844.21
1951-1952	4,628	146,497.25
1952-1953	5,041	161,735.01
1953-1954	5,109	160,911.75

HUNTING LICENSE REVOCATIONS

Continuing a Commission policy of long standing, hunting and trapping privileges were suspended in addition to the cash penalty imposed in convicted cases of a major character. Such revocations are based upon consideration of the severity of the offense, and may extend from one to ten years.

Hunter's Licenses revoked in 1952-1953 (Convictions)	991
Hunter's Licenses revoked in 1953-1954 (Convictions)	992

REFEREES' HEARINGS

Hunters or trappers who wound themselves or another by gunfire or bow and arrow through carelessness or negligence, or who commit acts of vandalism or assault upon a landowner, are also likely to lose their licenses. Such revocations are effected through a referee's hearing held in accordance with the Game Code. The numbers were as follows:

1952-1953—Number of Hearings	69
Hunting rights denied by hearings	48
Defendants discharged	21
1953-1954—Number of Hearings	102
Hunting rights denied by hearings	69
Defendants discharged	33

LICENSE REVOCATIONS BY COURT OF QUARTER SESSIONS

Some hunters had their licenses revoked by the various Courts of Quarter Sessions for shooting at, wounding or killing a human being in mistake for game:

Year	*No. of Revocations*
1952-1953	25
1953-1954	27



PGC Photo by Don Miller

Mrs. Lydia J. Ruddle, Stenographer in the Commission's Southeast Division headquarters, prepares to mail over 600 envelopes containing report forms and renewal applications to Special Permittees on May 1, 1954.

SPECIAL PERMITS

The Game Law provides that the Game Commission may issue Special Permits to qualified persons to conduct certain operations relative to wild birds and wild animals. The number and kind of such special permits issued during the past two fiscal years are set forth below:

ISSUED DURING FISCAL YEARS

June 1 to May 31 of year following

Kind of Permit	*1952-1953*		*Fee*	*1953-1954*		*Fee*
Collecting	30	(5 gratis)*	$150.00	22	(7 gratis)*	$110.00
Dog Training	206		2060.00	209		2090.00
Ferret Breeders	2		50.00	3		75.00
Ferret Owners	2	(2 gratis)*	10.00	2		20.00
Field Trial	89		445.00	124		620.00
Fox Hunting	22		1100.00	19		950.00
Fur Dealers—Resident	307		3070.00	281		2810.00
Fur Dealers—Employes	20		100.00	15		75.00
Fur Dealers—Non-Resident	10		1000.00	9		900.00
Fur Farming	367		1835.00	334		1670.00
Game Propagation	318		1590.00	382		1910.00
Regulated Shooting Grounds	60		3060.00	73		3550.00
Retriever Trials	3		30.00	3		60.00
Roadside Menagerie	40		200.00	41		205.00
Taxidermy	124		3100.00	120		3000.00
To Mount & Possess Protected Specimens	234	(26 gratis)*	242.00	228	(22 grat.)*	233.00
Totals	1834	(33 grat.)*	$18,042.00	1865	(29 grat.)*	$18,278.00

* Permits issued gratis were for educational or governmental purposes.

DEER KILLED TO PROTECT PROPERTY

In most sections of the State the deer population is so large that many persons find it necessary to exercise their prerogative under the law and kill the animals which materially damage cultivated crops, commercial nurseries and fruit orchards.

Year	*No. Reported Killed*
1952-1953	1,642 deer reported killed in 47 counties
1953-1954	1,848 deer reported killed in 51 counties

BEAR DAMAGE

The Game Law provides a fund not to exceed $5000.00 annually to pay damage caused by bears to livestock, poultry and bees upon lands open to public hunting. When natural food conditions are poor, bears travel considerable distances in search of food. These are the years that damage is the heaviest. A ten-year biennial record of claims investigated and satisfied follows:

BEAR DAMAGE TEN-YEAR PERIOD

	Total Claims	*Bees*	*Sheep*	*Pigs & Hogs*	*Calves & Cattle*	*Goats*	*Domestic Rabbits*	*Ponies*	*Chickens*	*Amt. Paid*
1944-1945 / 1945-1946	180	197	247	11	4	1	..	..	..	$5,086.20
1946-1947 / 1947-1948	203	334	188	10	1	1	..	1	..	7,065.99
1948-1949 / 1949-1950	104	..	31	11	1	2	..	..	..	3,139.47
1950-1951 / 1951-1952	74	151	17	4	1	..	4	..	50	2,517.28
1952-1953 / 1953-1954	170	484	38	5	2	..	..	..	..	7,264.75
Totals	731	1166	521	41	9	4	4	1	50	$25,073.69

Game Protector George Miller, Marienville, Forest County, demonstrates to a group of high school students some of the secrets of fox trapping in an effort to promote predator control.



TAXIDERMY EXAMINATIONS

Since 1937 the Game Commission has greatly improved the quality of taxidermy work by requiring new applicants for permits to appear before a Taxidermy Examining Board and successfully pass the examination before a permit is granted. The examining board consists of three members selected from three of the State's outstanding museums.

Year	*Successful Applicants*
1951-1952	5
1953-1954	2

NEW EQUIPMENT FOR FIELD OFFICERS

Complete new dress uniforms were purchased for the class that graduated from the Ross Leffler School of Conservation in the spring of 1953.

New summer weight forestry green work clothing was supplied all officers. Two pairs of trousers and three shirts were furnished each.

PREDATOR CONTROL SECTION

Public Instructions in Predator Control

The increase of predators in most counties in recent years, due primarily to the low fur prices, brought increased demands for trapping instructions. Predators were not only taking their toll of small game but in many localities were causing great loss of revenue to the farmers and ranchers through their destruction of chickens, turkeys, ducks, and geese. The Supervisor of the Predator Control Section traveled into forty-two counties and gave eighty-eight "on the spot" trapping demonstrations to 4,175 interested persons, most of them being F.F.A. and 4-H boys. Instructions given consisted of the dirt hole set for foxes, raccoons, opossums and skunks; the box set for weasels; calling and trapping the great horned owl; collecting fox urine and compounding of lures; preparation of equipment; preparing and submitting furs for bounty; legal requirements, etc.

Local predator control problems within the counties were discussed with one hundred and six District Game Protectors and various control techniques recommended.

PREDATORS KILLED BY SALARIED OFFICERS

In many sections of the State it sometimes becomes necessary to destroy predacious species of wildlife that are a menace to wildlife. When such controls are necessary it frequently becomes the duty of the game protector to make such reductions as are considered proper. During the biennium they accounted for the following:

Red Fox	1945
Gray Fox	1937
Weasels	389
Skunks	3250
Opossums	8840
Great Horned Owls	562
Snowy Owls	6
Goshawks	46
Coopers Hawks	593
Sharp Skinned Hawks	418
Crows	33696

OTTER SURVEY

A rather extensive survey of the otter populations was conducted in Lackawanna, Luzerne, Wayne, Pike and Monroe Counties during September and October of 1952 and again in the same section and during the same period in 1953. The purpose of this study was to evaluate the population of this diminishing species. Although trapping of this animal was prohibited during the fall of 1952, results of the survey indicated a lesser number living in the same area in 1953.

EQUIPMENT TO FIELD OFFICERS

(Predator Control)

One hundred and seventy dozen No. 2 traps; and one hundred and eighty dozen No. 1½ traps were furnished field officers to conduct predator control work and alleviate damage complaints.

BOUNTIES FOR PERIOD FROM JUNE 1, 1952 TO AND INCLUDING MAY 31, 1953

1. Weasel—$1.00 for each weasel.
2. Gray Fox—$4.00 for each gray fox.
3. Red Fox—$4.00 for each red fox.
4. Great-Horned Owls—$5.00 for each great-horned owl.

BOUNTIES PAID FROM JUNE 1, 1952 TO MAY 31, 1953

Total Claims	15,476
Weasels	8,936
Gray Foxes	17,574
Red Foxes	17,969
Great-Horned Owls	1,688
Total Amount Expended	$159,548.00

BOUNTIES FOR PERIOD FROM JUNE 1, 1953 TO AND INCLUDING MAY 31, 1954

1. Weasel—$1.00 for each weasel.
2. Gray Fox—$4.00 for each gray fox.
3. Red Fox—$4.00 for each red fox.
4. Great-Horned Owl—$5.00 for each great-horned owl, except those killed during the months of November and December.

BOUNTIES PAID FROM JUNE 1, 1953 TO MAY 31, 1954

Total Claims	14,191
Weasels	10,757
Gray Foxes	14,730
Red Foxes	16,266
Great-Horned Owls	1,237
Total Amount Expended	$140,926.00

There were 211 claims forwarded to the Division Supervisors to be investigated for possible fraud which resulted in the collection of $1,580.00 in fines. Claims were disapproved for the killing of 60 weasels, 266 gray foxes and 219 red foxes, or a saving of $2,000.00.

Bounty also was refused for the killing of 208 weasels, 265 gray foxes, 259 red foxes and 92 great-horned owls because the claims were outdated by the provisions of the Game Law or were improperly presented.



Raw furs sold to licensed fur buyers in Pennsylvania represent a tremendous economic value of muskrat, mink, beaver and other important furbearers. To many young trappers, such as the one shown here, there is no greater thrill than selling a "first" pelt, the result of hard work and considerable skill.

FURBEARERS

The market for long-haired furbearers has been so low that the trappers have not made any special effort to harvest the annual increase. Muskrats, minks and beavers, which are classed as short-haired species, have maintained a fair market value.

The season was closed on muskrats during the winter of 1950-1951. This allowed the muskrat population to increase and the take of muskrat pelts during the next two years was unusually large.

RAW FURS SOLD DURING THE SEASON OF 1951-1952

Species	No. of pelts	Total Value
Muskrats	701,178	$1,091,530.40
Skunks	34,474	34,890.38
Minks	10,109	142,778.02
Opossums	25,031	6,835.62
Beavers	2,428	37,628.58
Otters	6	87.00
Raccoons	65,541	92,061.30
Weasels	12,042	15,257.63
Red Foxes	7,028	1,874.38
Gray Foxes	7,185	1,719.43
Wild Cats	3	2.65
Totals	865,025	$1,424,665.39

RAW FURS SOLD DURING THE SEASON OF 1952-1953

Species	No. of pelts	Total Value
Muskrats	611,426	$842,418.70
Skunks	25,055	21,981.19
Minks	9,445	112,177.21
Opossums	21,571	5,434.16
Beavers	2,934	36,821.70
Otters	.....	.....
Raccoons	51,252	62,288.64
Weasels	9,993	11,259.85
Red Foxes	3,586	856.82
Gray Foxes	4,168	741.15
Wild Cats	.....	.....
Totals	739,430	$1,093,979.42

Game Propagation Division

GAME FARM OPERATIONS

Every effort was made to supplement natural reproduction through artificial methods. As a result the two ringneck pheasant farms and the wild turkey farm were operated at capacity. Bobwhite quail production was reduced to 25% capacity, or about 5000 birds per year.

The wildness of the turkey has been increased through the use of the special areas, where farm hens are mated with wild toms and the eggs gathered and returned to the farm. The poults from these eggs are marked and kept for breeders.

STATE GAME FARM PRODUCTION RECORD

	Calendar Years 1952	1953
Ringneck Pheasants		
Total number of eggs produced	520,810	486,467
Total number of eggs shipped to sportsmen	5,760	308
Total number of day-old chicks shipped to sportsmen	228,395	225,132
Total number of 20-24 week-old birds shipped for release	25,588	26,209
Total number of mature birds shipped for release	39,479	48,994
Bobwhite Quail		
Total number of eggs produced	48,392	43,939
Total number of eggs shipped to sportsmen	13,385	16,051
Total number of day-old chicks shipped to sportsmen	4,240	5,267
Total number of six-week old birds shipped to sportsmen	685	1,045
Total number of 14-15 week old birds shipped for release	6,115	5,196
Total number of mature birds shipped for release	8,142	4,900
Wild Turkeys		
Total number of eggs produced	19,580	16,552
Total number of eggs shipped	4,275	.....
Total number of poults shipped	250	900
Total number of 12-8 week old birds shipped for release	2,705	3,740
Total number of mature birds shipped for release	2,802	2,408

GAME PURCHASES

Fall purchases of pheasants have been continued. During 1953 the age of pheasants purchased was increased from 12 weeks to 15 weeks, with delivery in October, instead of September.



PGC Photo by Batcheler

More than 5,000 wild turkeys were raised at the Commission's farm in Lycoming County during the past two years. Releases made in selected areas throughout Pennsylvania have done much to earn the state its reputation as one of the best wild turkey hunting areas in the East.

GAME PURCHASES 1952-1954

	Number 1952-53	*Cost*	*Avg. Cost*	*Number 1953-1954*	*Cost*	*Avg. Cost*
Ringneck Pheasants	43,581	$81,803.90	$1.88	32,463	$62,218.08	$1.92
Mallard Ducklings	5,009	1,889.00	.38	6,430	2,438.00	.38
Black Ducks	11	16.50	1.50	.....	.....	.....
Canada Geese	24	120.00	5.00	27	135.00	5.00

* During 1953 the Commission received 49 sharptail grouse as a gift from the Province of Manitoba.

During the fiscal year 1953-54, 2,234 mallard ducklings were given to the Commission and 50 Hungarian Partridges were received in exchange for turkey eggs.

LIVE TRAPPING AND TRANSFER OF WILD GAME

The rabbit trapping program was curtailed to a 30 day period during the winter of 1953-54, yet the number trapped was the highest since the program was started eighteen years ago.

WILD GAME TRAPPED AND TRANSFERRED

	Fiscal Year 1952-53	*Fiscal Year 1953-54*
Cottontail Rabbits	52,779	59,516
Ringneck Pheasants	351	561

TOTAL GAME RELEASED 1952-1953

	From Game Farms	*Purchases*	*Trapped & Transferred*	*Farm-Game Co-operators*	*Totals*
Cottontail Rabbits	.....	.....	52,779	.....	52,779
Ringneck Pheasants	70,975	40,449	351	127,229	239,004
Bobwhite Quail	11,098	.....	.....	.....	11,098
Wild Ducks	.....	5,303	.....	.....	5,303
Wild Turkeys	5,087	.....	.....	.....	5,087

TOTAL GAME RELEASED 1953-1954

	From Game Farms	*Purchases*	*Trapped & Transferred*	*Farm-Game Co-operators*	*Totals*
Cottontail Rabbits	.....	.....	59,516	.....	59,516
Ringneck Pheasants	72,759	30,395	561	130,477	234,192
Bobwhite Quail	5,772	.....	.....	.....	5,772
Wild Ducks	.....	8,178	.....	.....	8,178
Wild Turkeys	7,262	.....	.....	.....	7,262
Canada Geese	.....	27	.....	.....	27
Hungarian Partridges	.....	50	.....	.....	50

WILD DUCK PROPAGATION

During 1952, 2725 mallard ducks, 5 weeks of age were banded and liberated. Of the 229 band returns, 36 were from Canada, and other states as listed below:

Ontario	7
Wisconsin	1
Minnesota	1
Ohio	1
Virginia	5
Maryland	5
New Jersey	5
Delaware	2
Alabama	1
New Hampshire	1
Vermont	1
New York	6

In addition, 27 band returns were received from ducks liberated in 1951.

During 1953, 7,104 mallards were banded and liberated. Band returns totaled 893 which included 258 checked during winter banding operations. Those received from outside the state are as follows;

New York	23
Ontario	20
Michigan	11
New Jersey	5
Virginia	5
North Carolina	5
Maryland	5
Minnesota	3
Indiana	2
Tennessee	2
Massachusetts	1
Delaware	1
Quebec	1
West Virginia	1
Ohio	1

Band returns from ducks liberated in 1952 totaled 33 and 7 were received from those liberated in 1951.

PHEASANT HOLDING

During the fall of 1953, pheasant cockbirds raised by farm-game cooperators were placed in the holding pens at 12 weeks of age, and held for release prior to and during the hunting season. The hens were liberated at 12 weeks of age.

TURKEY HARDENING PENS

The turkey hardening program started in the Northcentral and Southcentral Divisions proved very successful. Turkeys from the game farm are placed in open-top pens in the mountain and held until just prior to the hunting season.

Additional pens have been constructed in Venango, Westmoreland and Monroe Counties. Now all fall releases are made from hardening pens instead of direct from the turkey farm.

DAY-OLD PHEASANT CHICK PROGRAM

The day-old pheasant chick program reached the limit of the game farms hatching capacity. A new hatchery, named the Southwest Pheasant Hatchery, was started in 1953. It is located on Game Lands #137, near Distant, Armstrong County. This hatchery supplies pheasant chicks for the Southwest and Northwest Divisions. It is no longer necessary to transport chicks long distances. As a result, those cooperating in the program have much better results. In 1952, 228,395 chicks were distributed of which 55,140 pheasants were raised by sportsmen's clubs and 127,229 by farm-game cooperators and farmers whose lands are open to public hunting. In 1953, 225,132 chicks were supplied of which 52,365 were raised by sportsmen's clubs and 130,477 by farmers. Approximately 80% were raised and released in 1952, and 81% in 1953. This is the best record to date.

From all sources, a total of 580,701 pheasants were released—the highest number ever liberated by the Commission.

Mallard ducks, reared at the Commission's duck farm in Crawford County, have helped swell Pennsylvania's native duck population and have improved hunting during migration flights.



TABLE NO. 1

SUMMARIZED FUNCTIONAL EXPENDITURES

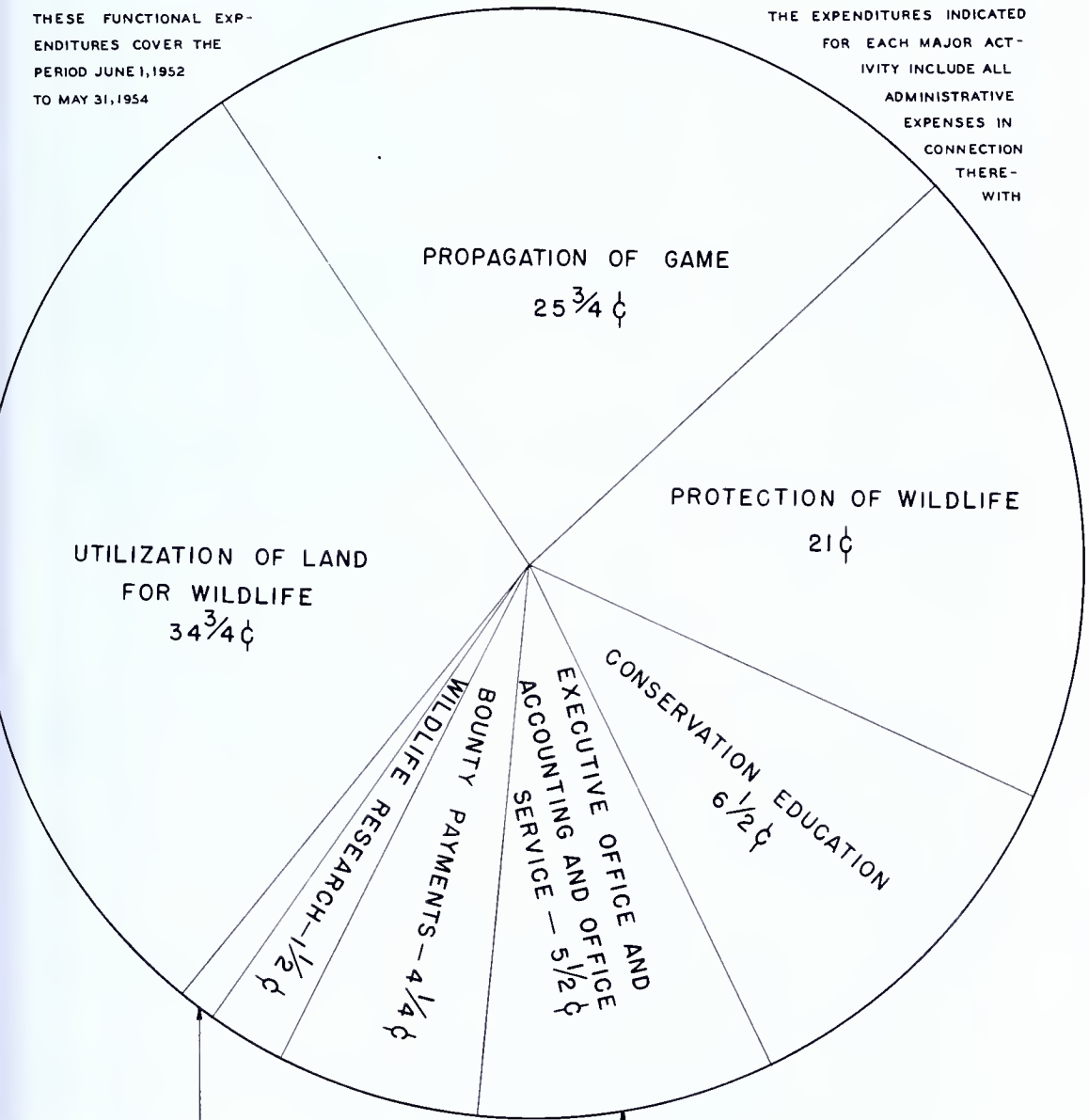
The expenditures of the Commission during the biennium ending May 31, 1954 have been subdivided into major activity groupings as follows:

		Part of Dollar
Utilization of Land for Wildlife. Management of State Game Lands, Cooperative Farm-Game Projects and other leased areas totaling 2,055,660 acres. Also payments in lieu of taxes	$2,734,215.52	34¾¢
Propagation of Game. Operation of game farms, purchase of game, wild game transfer, distributing of game	2,034,084.75	25¾¢
Protection of Wildlife. Salaries and expenses for enforcement of game laws, assistance in enforcement of fish, dog and forest laws and numerous other field activities	1,654,120.20	21¢
Conservation Education. Game News, publications, exhibits, motion pictures, radio broadcasts, attending Sportsmen's meetings, etc.	522,046.61	6½¢
Bounty Payments. Bounties on noxious animals including administrative expenses relating thereto	339,422.32	4¼¢
Wildlife Research. Wildlife studies to determine practical methods for developing management programs	123,048.54	1½¢
Instruction and Training. Maintenance of buildings and grounds during the two-year period, school maintenance and expense in connection with 7th class of student officers for ten months (Class enrolled May 25, 1952 and graduated March 28, 1953). Training School temporarily inactivated during 1953-1954	62,430.37	¾¢
Executive Offices. Accounting and Office Service ($437,311.35 subdivided below):		
Accounting and Office Service. Audit of accounts and bookkeeping, personnel matters; supervision over purchases, equipment and supplies	153,363.77	2¢
Hunting Licenses. Including tags, applications, reports	159,767.24	2¢
Executive Office. Administration, Salaries and expenses of Executive Office and expenses of Commissioners	78,909.13	1¢
Mailing. Mimeographing, etc., including postage	45,271.21	½¢
Totals	$7,906,679.66	100¢

HOW THE GAME FUND DOLLAR WAS USED

THESE FUNCTIONAL EXPENDITURES COVER THE PERIOD JUNE 1, 1952 TO MAY 31, 1954

THE EXPENDITURES INDICATED FOR EACH MAJOR ACTIVITY INCLUDE ALL ADMINISTRATIVE EXPENSES IN CONNECTION THEREWITH



INSTRUCTION AND TRAINING ---------- 3/4 ¢

ACCOUNTING AND OFFICE SERVICE --- 2¢
HUNTING LICENSES ---------- 2¢
EXECUTIVE OFFICE ADMINISTRATION -- 1¢
MAILING ---------- 1/2¢

L.C.-54

TABLE No. 2. PENNSYLVANIA GAME COMMISSION STATEMENT OF REVENUE, EXPENDITURES AND CASH BALANCES—FISCAL YEAR JUNE 1, 1953 TO MAY 31, 1954

REVENUE

Cash in State Treasury to credit of "Game Fund" June 1, 1953		$1,501,294.43
Receipts June 1, 1953 to May 31, 1954:		
Hunters' Licenses (after deducting the Issuing Agents' Commission)	$3,341,579.55	
Game Law Fines	160,911.75	
Special Game Permits (Fur Dealers, Taxidermists, Game Propagators, etc.)	18,306.00	
Interest on Deposits	14,703.63	
Sale of Forest Products from Game Lands	51,827.73	
Sale of Animal Skins	5,639.96	
Sale of Unserviceable Property and Equipment	2,841.79	
Rentals from Buildings and Land	26,730.18	
Sale of Publications	39,199.80	
Federal Aid for Wildlife Purposes (75% of cost of approved projects)	586,886.47	
Ground Rental and Royalties from Gas and Oil Leases	108,837.35	
Sale of Game Land to Department of Forests and Waters	19,584.00	
Right-of-Way Leases and Damages, Royalties on Coal, etc.	33,396.77	
Total Receipts from All Sources		4,410,444.98
Total Funds Available during Year		$5,911,739.41

CLASSIFICATION OF EXPENDITURES BY ORGANIZATIONAL UNITS

Classification of Expenditures	Exec. Office and Acct'g. & Ser.	Game Propogation	Wildlife Research	Land Utilization	Wildlife Protection	Bounty Claims	Conservation School (Instruction and Training)	Conservation Education	Total
Salaries	$103,510.53	$155,007.19	$37,698.80	$ 247,972.75	$471,627.63	$ 16,855.50	.....	$ 87,550.71	$1,120,223.11
Traveling Expenses of all kinds, including auto mileage	6,039.21	24,701.29	8,976.45	53,369.88	133,784.68	.....	75.30	16,860.82	243,807.63
Deputy Game Protectors (Wages and Expenses	.....	.....	.....	.....	101,802.11	.....	.....	.....	101,802.11
Cooperative Farm-Game Program (Total Cost)	.....	130,477.00	.....	186,844.92	21,957.13	.....	.....	.....	339,279.05
Wages (Land Management, etc.)	.....	.....	.....	418,736.16	.....	.....	.....	.....	418,736.16
Wages (Game Farm, etc.)	4,811.12	166,090.76	1,827.14	.....	8,592.40	.....	998.64	7,560.79	189,880.85
Purchase of Game	.....	103,898.59	.....	.....	.....	.....	.....	.....	103,898.59

Rabbit Trapping and Wild Game Transfer	.....	38,986.77	.....	.....	.....	.....	.....	.....	38,986.77
Feed (for Game Farms and game in the wild)	.....	221,957.28	.....	38,964.97	.....	.....	.....	84.59	261,006.84
Express and Cartage	2.35	569.19	204.78	2,657.69	2,108.25	52.86	.....	338.81	5,933.93
Purchase of Lands (title and survey included)	.....	.....	.....	76,335.11	.....	.....	.....	.....	76,335.11
Payments in Lieu of Taxes to Local Taxing Units	.....	215.94	.....	66,959.17	.....	.....	.....	.....	67,175.11
Building and Construction (mostly on Game Farms)	.....	4,029.07	.....	4,266.44	.....	.....	.....	250.00	8,545.51
Repairs to Buildings, Grounds and Equipment by Contract	67.94	197.55	.....	4,019.31	62.94	10.50	118.69	235.87	4,712.80
Equipment (mostly for land management and Game Farms)	508.52	2,301.82	28.48	34,538.30	1,065.95	.....	.....	100.19	38,543.26
Miscellaneous Supplies	3,643.56	27,978.70	851.66	105,155.94	8,835.76	147.24	44.40	11,950.89	158,608.15
Motor Supplies	634.13	17,900.67	262.64	41,140.18	5,021.28	.....	327.03	1,103.69	66,389.62
Light, Power and Fuel	.....	8,340.03	.....	630.80	281.44	.....	979.60	1,660.53	11,892.40
Insurance	727.54	2,284.93	184.31	10,289.41	3,176.55	89.22	19.03	510.11	17,281.10
Postage, Telephone and Telegraph	9,654.82	2,831.61	537.49	9,262.55	19,554.49	1,021.45	118.11	5,733.69	48,714.21
Rental of Equipment, Offices, Auto Storage, etc.	342.63	14,718.18	.....	21,183.14	6,991.58	16.18	.....	2,892.20	46,143.91
Bounty Payments and Grants	.....	.....	12,000.00	.....	.....	140,926.00	.....	3,500.00	156,426.00
Refund of Receipts	137.05	.....	.....	.....	475.00	.....	.....	.....	612.05
Fees:—Artists, Attorneys, Medical, Taxidermy, etc.	.....	.50	.....	387.15	999.60	.....	.....	12,555.79	13,943.04
Bear Damage Claims	....	.....	.....	.....	4,698.64	.....	.....	.....	4,698.64
Other Maintenance Services and Expenses	1,324.46	484.82	.....	381.46	2,346.26	58.30	57.42	1,262.00	5,914.72
Newspaper Advertising	.....	.....	.....	1,578.04	9,308.97	.....	.....	.....	10,887.01
Printing, Binding and Paper	3,974.11	541.46	523.24	1,917.24	6,515.22	27.55	.....	76,642.48	90,141.30
Printing Hunters' Licenses, Tags and Misc. Forms (*) (through Department of Revenue)	77,761.76	.....	.....	.....	.....	.....	.....	.....	77,761.76
Contributions to State Employes' Retirement System (*) (through Department of State)	8,518.14	14,277.56	3,097.50	23,279.68	39,105.98	1,355.16	.....	7,162.98	96,797.00
Replacement Checks (*) Through Department of Treasury	25.75	.....	.....	.....	.....	.....	.....	.....	25.75
TOTAL EXPENDITURES	$221,683.62	$937,790.91	$66,192.49	$1,349,870.29	$848,311.86	$160,559.96	$2,738.22	$237,956.14	$3,825,103.49

Amount Available in "Game Fund" May 31, 1954 (including $1,496,137.50 in U. S. Government Securities) $2,086,635.92

* These items are paid out of the "Game Fund" upon requisitions drawn by the Department of Revenue, Department of State and the Department of Treasury and are included to complete the picture of the "Game Fund" finances.

TABLE NO. 3

PENNSYLVANIA GAME COMMISSON

STATEMENT OF REVENUE, EXPENDITURES AND CASH BALANCES
FISCAL YEAR JUNE 1, 1952 TO MAY 31, 1953

REVENUE

Cash in State Treasury to credit of "Game Fund" June 1, 1952		$1,389,569.34
Receipts June 1, 1952 to May 31, 1953:		
Hunters' Licenses (after deducting the Issuing Agents' Commission)	$3,365,245.25	
Game Law Fines	161,735.01	
Special Game Permits (Fur Dealers, Taxidermists, Game Propagators, etc.)	17,975.00	
Interest on Deposits	8,239.36	
Sale of Forest Products from Game Lands	42,767.36	
Sale of Animal Skins	8,468.97	
Sale of Unserviceable Property and Equipment	2,372.68	
Rentals from Buildings and Land	28,505.84	
Sale of Publications	46,727.45	
Federal Aid for Wildlife Purposes (75% of cost of approved projects)	499,096.95	
Right-of-Way Leases, sale of Tags, etc.	12,167.39	
Total Receipts from All Sources		4,193,301.26
Total Funds Available during year		$5,582,870.60

CLASSIFICATION OF EXPENDITURES BY ORGANIZATIONAL UNITS

Classification of Expenditures	Exec. Office and Acct'g & Ser.	Game Propagation	Wildlife Research	Land Utilization	Wildlife Protection	Bounty Claims	Conservation School	Conservation Education	Total
Salaries	$ 94,557.51	$ 157,794.43	$29,605.30	$ 219,202.93	$409,944.35	$15,632.00	$31,146.87	$83,250.24	$1,041,133.63
Traveling Expenses of all kinds, including auto mileage	4,284.21	28,779.25	6,960.68	53,058.24	124,130.18	.....	10,739.43	15,440.53	243,392.52
Deputy Game Protectors (Wages and Expenses)	.....	.....	.....	.....	124,135.31	.....	.....	.....	124,135.31
Cooperative Farm-Game Program (Total Cost)	.....	127,229.00	.....	200,144.25	23,991.11	.....	.....	.....	351,364.36

Wages (Land Management, etc.)	.....	.....	.....	517,981.56	.....	.....	.....	.....	517,981.56
Wages (Game Farms, etc.)	3,007.14	194,208.46	2,648.16	.....	18,281.63	.....	3,868.15	8,637.22	230,650.76
Purchase of Game	.....	82,829.40	.....	.....	.....	.....	.....	.....	82,829.40
Rabbit Trapping and Wild Game Transfer	.....	52,036.32	.....	.....	.....	.....	.....	.....	52,036.32
Feed (for Game Farms and game in the wild)	.....	269,384.11	2.30	23,178.07	70.35	.....	.....	.....	292,634.83
Express and Cartage	20.95	1,153.29	6.94	2,027.00	1,214.86	53.63	11.87	722.30	5,210.84
Purchase of Lands (title and survey included)	.....	.....	.....	20,679.14	.....	.....	.....	.....	20,679.14
Payments in Lieu of Taxes to Local Taxing Units	.....	215.94	.....	66,829.46	.....	.....	.....	.....	67,045.40
Building and Construction (mostly on Game Farms)	.....	32,829.98	.....	8,093.39	.....	.....	.....	.....	40,923.37
Repairs to Buildings, Grounds and Equipment by Contract	633.92	4,204.50	5.00	1,869.43	55.15	.....	1,309.92	211.76	8,289.68
Equipment (mostly for land management and Game Farms)	1,489.83	13,945.28	61.15	22,696.97	1,285.38	300.00	1,721.15	2,776.33	44,276.09
Lime, Fertilizer, Seeds, Films, etc.	3,669.53	64,098.33	611.38	131,810.68	12,591.73	78.42	5,857.52	16,215.61	234,933.20
Motor Supplies	805.24	19,106.66	1.50	41,705.88	5,706.55	21.95	725.38	1,051.42	69,124.58
Light, Power and Fuel	.....	8,512.70	.....	592.41	246.75	.....	1,344.10	1,625.05	12,321.01
Insurance	689.52	2,492.98	139.69	11,340.82	2,818.53	76.19	212.61	543.72	18,314.06
Postage, Telephone and Telegraph	12,114.47	4,085.87	328.39	8,580.17	16,469.98	2,022.00	221.18	7,370.49	51,192.55
Rental of Equipment, Offices, Auto Storage, etc.	238.24	22,137.92	.....	32,617.93	6,792.78	55.98	39.00	3,352.01	65,233.86
Bounty Payments and Grants	.....	.....	12,000.00	.....	.....	159,548.00	.....	3,800.00	175,348.00
Refunds of Receipts	171.65	.....	.....	.....	170.00	.....	.....	.....	341.65
Fees:—Artists, Attorneys, Medical, Taxidermy, etc.	.....	2.12	2.00	695.08	707.75	.....	12.50	9,912.23	11,331.68
Bear Damage Claims	.....	.....	.....	.....	2,566.11	.....	.....	.....	2,566.11
Other Maintenance Services and Expenses	1,320.51	516.41	4.18	485.90	1,250.68	47.80	371.71	1,083.85	5,081.04
Newspaper Advertising	.....	.....	.....	330.07	10,126.15	.....	.....	.....	10,456.22
Printing, Binding and Paper	4,778.92	157.37	2,666.78	3,474.64	18,950.67	86.52	163.89	123,331.23	153,610.02
Printing Hunters' Licenses, Tags and Misc. Forms* (through Department of Revenue)	82,005.48	.....	.....	.....	.....	.....	.....	.....	82,005.48
Contributions to State Employes' Retirement System* (through Department of State)	5,840.61	10,573.52	1.812.60	16,951.21	24,302.34	939.87	1,946.87	4,766.48	67,133.50
TOTAL EXPENDITURES	$215,627.73	$1,096,293.84	$56,856.05	$1,384,345.23	$805,808.34	$178,862.36	$59,692.15	$284,090.47	$4,081,576.17

Cash Balance in State Treasury to credit of "Game Fund" May 31, 1953 ..... $1,501,294.43

* These items are paid out of the Game Fund upon requisitions drawn by the Department of Revenue and the Department of State and are included to complete the picture of the Game Fund finances.

TABLE No. 4—STATE GAME LANDS—ACREAGE WITHIN RESPECTIVE COUNTIES

Counties	Total Acquired to May 31, 1953	Acquired During Fiscal Year 1953-1954	Total Acquired to May 31, 1954	Number of Townships
Allegheny	1,311.6	....	1,311.6	3
Armstrong	2,416.8	....	2,416.8	3
Beaver	1,421.8	....	1,421.8	5
Bedford	38,145.65	....	38,145.65	15
Berks	9,128.2	....	9,128.2	12
Blair	18,840.94	....	18,840.94	8
Bradford	41,920.04	....	41,920.04	12
Bucks	3,703.7	3.1	3,706.8	6
Butler	2,719.9	....	2,719.9	4
Cambria	20,633.41	....	20,633.41	9
Cameron	12,762.7	....	12,762.7	1
Carbon	25,382.5	....	25,382.5	5
Centre	46,629.4	....	46,629.4	13
Chester	926.7	....	926.7	1
Clarion	12,141.9	....	12,141.9	8
Clearfield	25,140.8	....	25,140.8	12
Clinton	10,571.2	....	10,571.2	2
Columbia	13,467.4	....	13,467.4	10
Crawford	14,556.7	....	14,556.7	15
Cumberland	1,076.2	....	1,076.2	3
Dauphin	27,278.4	....	27,278.4	5
Elk	63,896.1	....	63,896.1	8
Erie	8,315.0	58.5	8,373.5	10
Fayette	10,322.1	....	10,322.1	4
Forest	7,056.9	....	7,056.9	2
Franklin	6,966.9	....	6,966.9	5
Fulton	14,793.3	....	14,793.3	8
Greene	1,067.6	25.3	1,092.9	1
Huntingdon	17,653.2	....	17,653.2	19
Indiana	4,510.2	....	4,510.2	4
Jefferson	24,459.86	....	24,459.86	8
Juniata	6,828.5	....	6,828.5	6
Lackawanna	4,307.9	....	4,307.9	3
Lancaster	5,079.5	....	5,079.5	6
Lawrence	2,023.9	....	2,023.9	6
Lebanon	19,859.1	....	19,859.1	6
Lehigh	2,483.33	....	2,483.33	3
Luzerne	31,996.5	67.0	32,063.5	12
Lycoming	37,193.3	....	37,193.3	9
McKean	20,633.93	....	20,633.93	3
Mercer	965.6	....	965.6	2
Mifflin	2,324.2	....	2,324.2	4
Monroe	28,463.9	2,475.7	30,939.6	8
Montour	227.5	....	227.5	1
Northampton	1,401.1	....	1,401.1	2
Northumberland	9,385.6	....	9,385.6	11
Perry	4,996.4	....	4,996.4	4
Pike	12,599.5	....	12,599.5	6
Potter	17,617.1	50.0	17,667.1	7
Schuylkill	9,641.5	....	9,641.5	8
Snyder	2,185.1	....	2,185.1	5
Somerset	12,284.7	....	12,284.7	8
Sullivan	47,998.1	855.3	48,853.4	7
Susquehanna	12,012.1	....	12,012.1	6
Tioga	20,496.0	....	20,496.0	7
Union	565.1	....	565.1	2
Venango	16,082.38	....	16,082.38	11
Warren	32,427.41	....	32,427.41	7
Washington	2,975.6	....	2,975.6	2
Wayne	10,788.4	....	10,788.4	4
Westmoreland	7,700.8	....	7,700.8	2
Wyoming	28,094.0	29.3	28,123.3	3
York	1,324.1	....	1,324.1	2
TOTAL—63 Counties	902,179.25	3,564.2	905,743.45	394

TABLE No. 5. SUMMATION OF ACREAGES IN GAME MANAGEMENT PROJECTS

Classification	Number of Units	Total Area (Acres)	Area Closed to Hunting						Acreage Open to Hunting
			Refuges		Propagation		Safety Zones		
			No.	Acres	No.	Acres	No.	Acres	
State Game Lands	198	905,743.45	147	36.233	....	.....	....	.....	869,510.45
Primary Refuges on State Forests, etc.	46	24,743.00	46	24,743	....	.....	....	.....	(A)
State Game Farms	4	2,879.00	....	.....	4	2,879.00	....	.....	None
Cooperative Farm-Game Projects Comprise 10,285 Farms	167	1,040,174.00	666	6,439	....	.....	10,740	186,540	847,164.00
Auxiliary Projects General Classification	19	19,658.00	21	4.540	....	.....	....	.....	15,118.00
Game Propagation Areas	258	50,962.79	....	.....	258	50,962.79	....	.....	None
Dog Training Preserves	10	6,378.30	....	.....	....	.....	....	.....	Restricted
Special Areas	28	10,111.00	....	.....	....	.....	....	.....	None
Archery Hunting Preserves	2	1,685.00	....	.....	....	.....	....	.....	Archers Only
TOTALS	732	2,062,334.54 Deduct 6,674.30 (B) 2,055,660.24 (C)	880	71,955	262	53,841.79	10,740	186,540	1,731,792.45
Special Wildlife Refuge, Projects (leased by Sportsmen's Organizations)	96	30,661½	109	2,961½	....	.....	180	2,001	25,700.00

(A) About 1,500,000 acres of State Forests on which refuges are located are open to public hunting.

(B) Two Dog Training Preserves, One Archery Hunting Preserve and twenty-two Special Areas totalling 6.674.3 acres, are located on State Game Lands. This acreage deducted to eliminate duplication.

(C) 83% open to public hunting with firearms.

TABLE No. 6. SPECIAL PRESERVES

DOG TRAINING PRESERVES

Serial Number	Location		Owner of Land	Agreement		Acres	Class of Dogs Which May be Trained	Hunting Limitations
	County	Township		Dated	Term			
3	Lycoming (near Haneyville)	McHenry	Dept. of Forest & Waters, Tiadaghton State Forest	5-4-39	Effective until cancelled on 30 days notice	800	All classes of hunting dogs. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
4	Forest Clarion	Green Farmington	Game Commission S.G.L. No. 24	App. by Commission 7-12-39	Until abandoned	985	Bird dogs only. Field trials may be conducted.	No small game or bears may be hunted or killed. Deer may be killed in season.
6	Washington	North Franklin	Citizens Water Co., Washington, Pa.	5-6-41	1 yr. & thereafter until cancelled	578	All classes of dogs. Field trials may be conducted.	No game of any kind may be hunted or killed.
7 Black Grouse Trial Area	Lycoming (near Pump Station)	Brown	Tiadaghton State Forest	9-1-45 App. by Commission 6-28-45	Until Abandoned	715	All classes of dogs, but especially grouse dogs. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
8	Forest	Jenks	Allegheny National Forest	12-2-47 App. by Commission 1-8-48	1 yr. & thereafter until cancelled	1,000	Bird dogs only. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
9	Forest	Jenks	Allegheny National Forest	12-2-47 App. by Commission 1-8-48	1 yr. & thereafter until cancelled	1,000	Bird dogs only. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
10	Forest	Jenks Barnett Millstone	Allegheny National Forest	10-29-48 App. by Commission 7-1-48	1 yr. & thereafter until cancelled	1,000	Bird dogs only. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
11	York	Fairview	James E. Lower, et ux.	4-29-49	5 yrs. with renewal rights	108	All classes of dogs. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
12	Bucks	Solebury	Arthur R. & Virginia Eakin	10-29-52 App. by Commission 10-1-52	5 yrs. with renewal rights	128	Solely for training spaniels and non-slip retrievers.	No small game may be hunted or killed. Deer and bears may be killed in season.
13	Erie	Waterford	S.G.L. No. 109	App. by Commission 1-8-53	Until abandoned	64.3	Bird dogs only. Field trials may be conducted.	No small game may be hunted or killed. Deer and bears may be killed in season.
					Total	6,378.3		

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

Pennsylvania Official 1954 Open Seasons and Bag Limits

(Regulations apply for Hunting License Year, September 1, 1954-August 31, 1955)

Open season includes first and last dates listed, **Sundays excepted**, for game. **The opening hour for small game and other wild birds or animals on October 30 will be 9:00 A. M.** Otherwise, shooting hours daily are from 7:00 A. M. to 5:00 P M., but from July 1 to September 30 inclusive, 6:00 A. M. to 7:30 P. M. (All shooting hours based on Eastern Standard Time.)

	BAG LIMITS		OPEN SEASONS	
UPLAND GAME (Small game possession limits below)	Day	Season	First Day	Last Day
Ruffed Grouse	2	8	Oct. 30	Nov. 27
Bobwhite Quail	4	12	Oct. 30	Nov. 27
Wild Turkeys	1	1	Oct. 30	Nov. 27
Ringneck Pheasants, males only	2	8	Oct. 30	Nov. 27
Rabbits, Cottontail	4	20	Oct. 30	Nov. 27
Squirrels, Gray, Black & Fox **(combined)**	5	20	Oct. 30	Nov. 27
Squirrels, Red **(closed October 1 to 29 incl.)**	Unlimited		All mos. (except Oct. 1-29)	
Hares (Snowshoe Rabbits)	2	6	Jan. 1	Jan. 8, 1955
Raccoons	Unlimited		Unprotected	
Woodchucks (Groundhogs)	Unlimited		Unprotected	
Grackles	Unlimited		Unprotected	
Bears, over one year old, by individual	1	1	Nov. 15	Nov. 27
Bears, as above, by hunting party of three or more	2	2	Nov. 15	Nov. 27
DEER: **Bow and Arrow Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal (requires hunting license and Special Archery License) by individual	1	1	Oct. 11	Oct. 23
DEER: **Regular Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal: by individual	1	1	Nov. 29	Dec. 11

NO OPEN SEASON—Hungarian Partridges, Hen Pheasants, Sharp-tailed Grouse, Cub Bears, Elk, Spike Bucks with antlers less than three inches long, Antlerless Deer, and Otters.

FURBEARERS:			
Skunks and Opossums	Unlimited	Unprotected	
Minks	Unlimited	Nov. 5	Jan. 1, 1955
Muskrats (traps only)	Unlimited	Dec. 1	Feb. 1, 1955
Beavers (traps only) state-wide	4 — 4	Feb. 14	Mar. 5, 1955

SPECIAL REGULATIONS

POSSESSION AND TRANSPORTATION LIMITS of legally-killed small game shall mean not more than the daily limit for the first day nor more than an accumulated total for each succeeding day of the open season for each species; but not in excess of the season limit, regardless of where held, stored or found in possession.

DEER—Even though there are two separate seasons for taking deer, a hunter may not kill more than one deer during the two combined 1954 seasons, whether hunting individually or with a camp or hunting party. A Special Archery License is required during Bow and Arrow Season, issued only by the Pennsylvania Department of Revenue, Harrisburg, at a fee of $2.00.

BEAVERS—No trapping at Commission-posted dams. **Nonresidents may not trap beavers. One person may set, tend or operate 10 traps only.** Traps must not be set on the structure of any beaver dam or house, or within 25 feet of the waterline on the structure of either thereof. Tags must be kept above ice or waterline to facilitate identification without disturbing traps. **Pelts must be tagged within 10 days after season,** and may not be sold or otherwise disposed of until properly tagged. Present them to the Game Protector in District or County where trapped.

TRAPPING—Traps for furbearers not to be placed, staked or set before 7:00 A. M. on the first day of the open seasons. The season indicated for Trapping closes at 12:00 o'clock Noon on last day. Traps must be tagged with metal name tags.

SNARES—The use of snares is prohibited in all counties except by special permit.

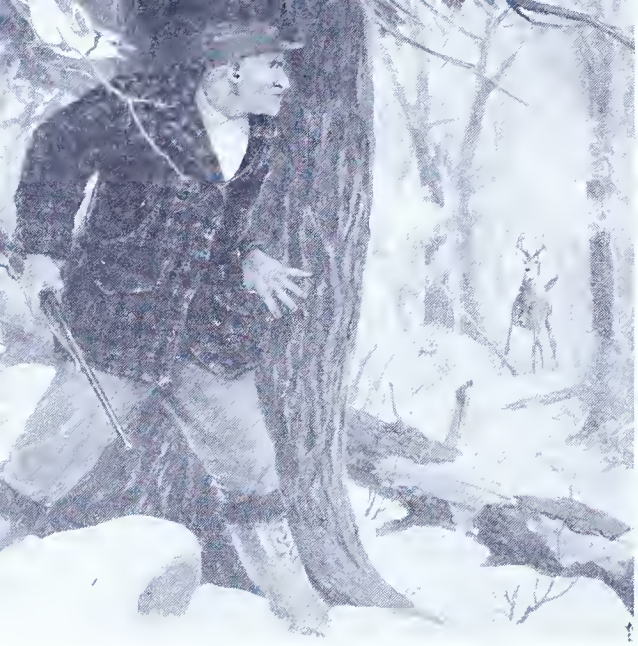
PENNSYLVANIA Game News

PENNSYLVANIA STATE LIBRARY
DOCUMENTS SECTION

DECEMBER 1954 10 CENTS



P38.34
1:6



THE STORY BEHIND THE COVER

TO over a half million Pennsylvania deer hunters, the crucial moment captured by artist-deer hunter Ned Smith on this month's cover should bring cold chills and considerable worry. Will the bluejay, perennial "stool-pigeon" of the winter woods, alert that nice buck to the danger lurking behind the hemlock? Or will the crimson-coated but ice-cold hunter have time to make the shot for which he has probaly waited so long?

Regardless of the outcome, this scene serves to emphasize the thrills and chills which characterize hunting the white-tailed, the finest big game animal of them all. No other wildlife species has brought the Keystone State more fame and fortune, none have provided so many people with more pleasure. From eager and enthusiastic sportsmen to housewives and tourists, the sight of a deer in its native haunts is a real, blood-tingling experience.

Pennsylvania's deer hunting most often centers around the "drive." To the hunters, this is a highly complicated affair, involving as much planning as a major army offensive. Actually, the plan of attack is usually quite simple, one group of hunters stationing themselves like silent sentries at one end of the terrain while the rest of the party proceeds to move in a line of skirmishers towards them. The "drivers" commonly make as much noise as possible, shouting or whistling and beating the brush as they move forward. Meanwhile, those "on watch" stay as quiet as possible, stifling all sneezes, coughs and cold shivers. In theory, all the deer on the ridge, bench or valley rush panic stricken into the gun-sights of the hunters on watch. Only hitch is that somehow some of the best bucks manage to sneak back through the drive, around the flanks, or just plain vanish into thin air.

There are other methods of obtaining a deer, of course. The still hunter prefers to take a solitary stand and wait his turn. He relies almost entirely on a thorough knowledge of the deer's daily habits, feeding areas, travel routes and favorite crossings. And for the supreme test of a woodsman's skill, there are still a few men who accept the challenge of stalking their quarry. They follow a trail hour after hour, using all their stealth and skill to move within gun-shot range (or more often these days, within bow and arrow range) of their quarry.

In the long run, though, there is no sure, fool-proof way to bag a buck. Venison on the hoof is a crafty, elusive thing; venison in the frying pan almost always is the result of luck, patience and skill. And that's why so many hunters consider gunning for a white-tailed deer the greatest sport on earth.

PENNSYLVANIA Game News

Published Monthly
by the
Pennsylvania Game Commission
Commonwealth of Pennsylvania
JOHN S. FINE, GOVERNOR

★

PENNSYLVANIA GAME COMMISSION

John C. Herman, *President* .....Dauphin
Col. Nicholas Biddle,
Vice President .....Bethayres
Ross L. Leffler .....Pittsburgh
G. I. Phillips .....Alexandria
B. K. Williams .....East Stroudsburg
H. L. Buchanan .....Franklin
Andrew C. Long .....Shamokin
Tom L. McDowell .....Bradford

Dr. Logan J. Bennett
Executive Director

★

PENNSYLVANIA GAME NEWS

Will Johns .....Editor
Zelda Ross .....Circulation

Vol. XXV No. 12

December, 1954

CONTENTS

Epitaph To A Buck 4
By Jim Hayes

Return Of The Indian Devil .. 8
By Stanley P. Young

Elk Live Here 15
By Roger M. Latham

How Far Is It? 20
By Robert S. Bell

Road To Conservation—Strip Cropping 23
By Ivan McKeever

Field Notes 28

A Sportsman's Guide to Elk County 31

The Dollar Side of Deer Damage to Farm Crops 37
By J. K. Pasto & D. W. Thomas

★

Cover Painting
By
Ned Smith

PENNSYLVANIA GAME NEWS is an official publication of the Pennsylvania Game Commission, Harrisburg. Permission to reprint any article or news item is granted provided such information is not used for advertising or commercial purposes and proper credit is given.

HOW TO SUBSCRIBE

RATES—$1.00 per year except for a special rate of $2.50 on a three year subscription only. Make checks or money orders payable to "The Pennsylvania Game Commission". Cash forwarded is done so at sender's risk. Stamps are not acceptable. District Game Protectors, Sportsmen's Clubs, County Treasurers or other Hunting License Issuing Agents accept subscriptions or you may forward your order direct to Pennsylvania Game Commission, Game News Section, Harrisburg, Pa. Notice of change of address should be received 45 days prior to issue with which it is to be effective.

Printed at The Telegraph Press, Harrisburg, Pa.

Entered as second-class matter at the Post Office of Harrisburg, Pennsylvania, under the Act of March 3, 1879.



PGC Photo by Parlaman

To A Good Sportsman

Who thinks of the other fellow as well as of himself.

Who, when hunting, strives to kill clean so that his game will not suffer.

Who, when in doubt as to doe or buck, cock or hen, gives the game the benefit of the doubt.

Who enjoys the sport for the sport's sake and not for the game in the bag or the fish in the creel.

Who respects the property rights of those upon whose land he is privileged to hunt.

Who never allows his gun to be pointed at anything he does not intend to kill.

Who earnestly strives to conserve and protect the natural resources of his state and nation.

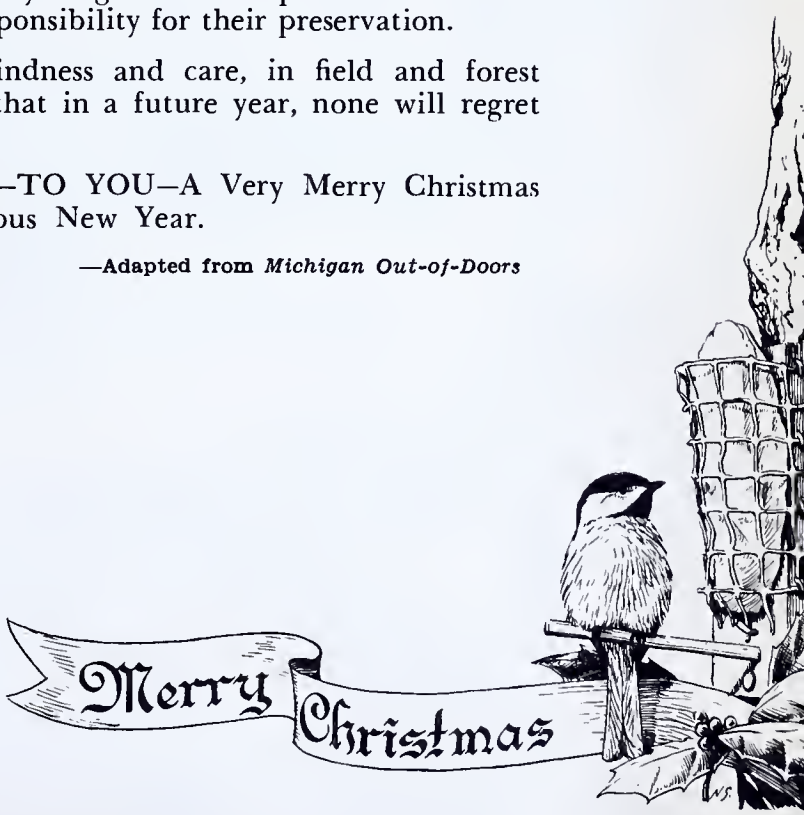
Who in the wonders of nature beholds the power and the glory of his Creator.

Who realizes that God has not only given him dominion over all the earth and everything that lives upon it but has also charged him with the responsibility for their preservation.

Who uses courtesy, kindness and care, in field and forest anywhere; who so lives that in a future year, none will regret that he passed here.

To a good sportsman—TO YOU—A Very Merry Christmas and a Peaceful, Prosperous New Year.

—Adapted from *Michigan Out-of-Doors*



Epitaph To A Buck

By Jim Hayes



DEATH almost always comes violently to wild creatures. The bird or animal which fulfills its years and settles down peacefully to the unending sleep is the rarest of exceptions to Nature's law.

More often the struggle to survive is lost almost before it has begun. A swoop of hawk's wings cuts short the acorn gathering of the young squirrel. The baby grouse struggling under a fox's paw will never make thunder on the drumming log.

Life is hard and death is brutal. And the hunter's gun is only one of many instruments to the common end. Sometimes it seems to have a meaning. But, generally, death in Nature offers little by way of significance.

It was near the close of deer season. I was out for my last hunt. There had been quite a few bucks taken earlier. My best chance would be to go in deep where there hadn't been many hunters.

After reaching the section I wanted to hunt, I went up a narrow valley. The laurel was thick; fern, deep moss, the polished green and bright red of teaberry; deer trails winding to the slopes. Near the head of the valley, where it forks into a rocky ravine, something in the laurel caught my eye. It was like sunlight on polished ivory—a brief glimpse. I climbed to the place. There, sprawled at my feet, lay the most magnificent buck deer I had ever seen.

He had been dead about three days —gutshot.

This was in Washington County where bucks come big. But this was the granddaddy of them all. He was thick-necked, and the antler rack was tremendous. It was wide, perfectly balanced, eight points on either side —a sixteen point buck.

Even in death the hide was glossy and sleek. There was some gray around the nose and face, and just a touch of graying across the shoulders. He was the most beautiful creature I had ever seen.

But that buck had died hard—real hard. The slug tore through the pit of its stomach leaving a jagged hole where it came out. The earth was scuffed at the deer's feet.

Things like that just don't add up. The hunter who had fired the shot must have felt plenty bad about losing his trophy. He would have felt worse had he known how hard the deer was hit.

And the buck—how a buck like that must have wanted to live. No one who has ever hunted deer can fail to marvel at their will to survive, their unspeakable lust for life. Even with its heart shot to pieces a buck can make a hundred yards before going down. A gutshot deer might go several miles before sickness and agony bring him to earth.

If there was any significance at all to my finding that buck, seeing how he died, it seemed to me to be this: That he had died in a wild place, away from the smell of man. Probably the last hunter had left the woods, and the final gun shot receded in evening echoes, when he drew in his last breath of pine-scented air.

And this you might add: The buck had attained his prime. The winters ahead would have been harder. He had lived to the fullest in the sun and the wind. Somewhere, out there in the woods, in fawns not yet born, it had been assured that his splendor would be perpetuated.

Looking down on the deer you could imagine him outlined against a winter sky, facing into the wind, his head held high with a proudness that makes you blink. That's how we like our deer—proud against the sky, or sneaking phantom—like into the pine. And, if the deer is to die—as all deer must—we want them to die in a noble way.

You can glory in the buck run to bay on some rocky ledge, bleeding and torn at the flanks by stray dogs, turning with lowered antlers for a final stand, then leaping out into

space. Or, routed by a hunter, you thrill to the deer bounding off in the laurel, antlers flashing, and seeing him brought down from a well-placed heart shot. Such is the destiny of the buck.

Man—most men—tries to be a merciful hunter. He asks, not necessarily for kills, but for a good day afield. He prays that if he kills, he kills clean. The hunter is rarely content with some dead thing, a handful of fur or feathers, as evidence of his day afield. He wants from his sport something he can hang on to; if not tangibly, at least in his mind.

In grouse hunting action comes fast. The brown flurry of wings, swinging gun, the shotgun blast, a puff of feathers, plummeting bird—all in a split second. You find him in dry leaves. The kill—a blur across the mind, a reaction—is over. But it stays with you afterwards. It is part of the day, the trees, the hills—impressions that last.

This past season was my first experience at duck hunting. On my third time out I arrived at the beaver dam just at daybreak. The dawning was cold and clear, a dazzling blue sky flushed with pink. There were a few scattered morning flights, but no ducks winged within shooting range of my beaver pond. About ten o'clock, with the sun well above the horizon, and warming, I spread my coat under a pine tree and went to sleep.

It was late in the afternoon when I awoke. Soon it would be time for the evening flights to begin. I went back to the cattails at the corner of the pond and began waiting. The sunset came as breath-taking as the dawn. The sky was flushed with red and gold. Scattered clouds hung suspended in the west, white islands in a sea of color.

Just as the sun was about to complete its descent I spotted a duck coming in. He was a long way out, coming in low and fast with the breeze behind him. I let him come on, following him over the bead-sight of my shotgun, as he dipped toward the pond, wings arced, feet forward, braced for landing.

He never made it. The shotgun slammed against my shoulder. The duck folded; his speed carried him splashing into the water. I waded out and fetched him—a drake wood duck in georgous plumage.

The taxidermist did a superb job. The blue-green plumed head is back and the beak slightly open. The tail is down and fan-spread. The web feet are extended, heels forward, and the wings curved back as in landing. You can almost hear the wind whistling through them.

Now a mounted wood duck is not a great thing. But to the man who bags him he may be quite special. He may be part of a very satisfactory day. He is the reason for watching the dawn from a particular beaver dam. He is a nap in the crisp scented air under a pine tree. He is a flash of wings in the sunset—a memorable event. It was important, of course, that the duck died quickly and clean. He had to go down just as he did.

To most buck hunters the practical thing to preserve, tangibly, is their deer head. The head and antlers are the crowning glory. The rack is the measure of the buck. Hunters want to see their deer as he looked when they came up to him. The rest of it—the flashing white tail, the front shoulder outlined in a rifle sight, pine and laurel, mountain and sky—manages to come back at the fireside long afterwards.

These are a few of the reasons why the thoughtful hunter, who would enjoy the best in his sport, wants to take no shots that leave any doubt of a clean kill. This may cost him something by way of shooting. But he is selfish. He wants nothing to mar his hunting day. He wants his rifle to never leave behind any tragedy in the laurel.

Of his buck—whether well taken,

or left to pass without a shot, for want of a sure one—he wants to think well. He wants no memory bittered by a deer left crippled to die. He wants to say more of his buck than merely that it died in a wild place.

It is not a heroic epitaph. But for the buck in that ravine thick-grown with laurel it is the best we can offer. Of a thousand buck deer, this was the greatest. He goes back to the earth from which he came. He died in a wild place, away from the smell of man.



Conservation Indian Style

This item purportedly tells an American Indian's dim view of the way the white man squandered natural resources. A farm journal titled Farmer-Stockman once printed a picture of a deserted farm house and a gullied field, and offered a $25 prize for the best 100-word description. Here is the winning entry, as quoted by Outdoor America:

"Picture show white man crazy. Cut down trees. Make big tepee. Plow Hill. Water wash. Wind blow soil. Grasss gone. Door gone. Window gone. Whole place gone. Buck gone. Papoose gone. Squaw, too. No chuck-away. No pigs. No corn. No plow. No hay. No pony.

"Indian no plow land. Keep grass. Buffalo eat grass. Indian eat buffalo. Hide make tepee. Make mocassin. Indian no make terrace .No build dam. No shoot pig. No hunt job. No hitch hike. No ask relief. No shoot pig. Great Spirit make grass. Indian no waste anything. Indian no work. White man he loco."

The Return of the Indian Devil

By Stanley P. Young

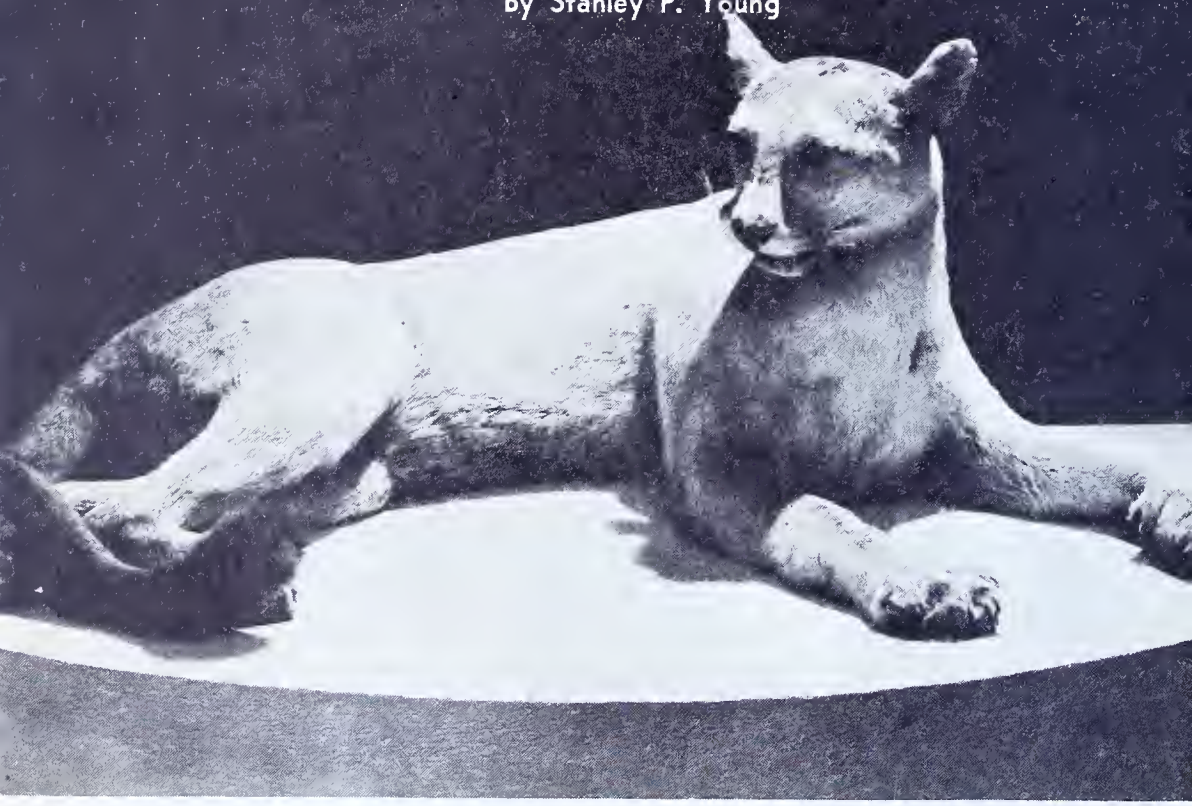


Photo courtesy Moyer Taxidermist, Allentown

DURING the past several years, there has occurred in the press dispatches, and magazine articles, the latest being that by author Herbert Ravenel Sass in the *Saturday Evening Post*, much pro and con regarding the comeback in the Eastern States of our second largest American wild cat, the puma. In common with many other American mammals of wide dispersal, the puma has received many names. This creature if you live in the far Northwest is called cougar; if in the Rocky Mountain area, mountain lion; if in the Middle Eastern and Southern States panther, or painter, a corruption of panther; if in New England cat-a-mount, or Cat-of-the-mountain; and if in the Canadian New Brunswick area, Indian devil. Regardless of location it is the one and same animal with no differences in its habits or characteristics. Puma is its right name, for long ago the Incas of Peru were the first to dubb it so.

Succeeded only in size in the Western Hemisphere by the jaguar, but similar in strength, nevertheless the puma, panther, cougar, or what have you will weigh when fully matured between 100 and 227 pounds, the latter weight being the record, which was a specimen killed by the late

Introducing . . .

Stanley P. Young is one of this continent's leading naturalists. A native Oregonian and a leading authority on American mammals—particularly the large predators—he is presently Senior Biologist of the U. S. Fish and Wildlife Service. He has authored or co-authored many books and scientific papers, including "The Wolves of North America", "The Puma, Mysterious American Cat", and "Sketches of American Wildlife."

Theodore Roosevelt on February 14, 1901, near Meeker, Colorado. This specimen, known among the puma geographic races, of which there are now 30 recognized, as *Felis concolor hippolestes* (horse killer) is the largest of all.

What else is there to this creature, which should enable anyone to recognize it, if seen in the wild? Well to begin with, the puma personifies grace in its movements. When viewing this mammal, particularly a male, one really becomes aware of its strength and endurance. Its ability to strike a powerful blow with its forepaws comes from the strong muscular development of the shoulders. The large padded paws, which often in soft ground make a track from 4 to 6¾ inches in width, have long retractile claws with terrific ripping power. Study of its cranial structure reveals a well-set and heavy-boned jaw, formed so that it does not have any backward or forward motion. While the animal cannot catch swift prey by running, its fine muscular coordination, cushioned feet, and ability to conceal itself enable it to make a stealthy approach. Then comes the pounce or spring and the striking in of the claws which are so constructed that the harder the victim tries to disengage, the more firmly they hold.

There is also a wide coloration pattern among the various races. Red or brown are the most common colors. The ears and tip of the long tail, the latter being approximately 1/3 length of its body, the entire body length when fully matured generally approximating 7 feet to 8½ feet, are usually dark, while the belly as well as the rump extending to the first hind leg joints are white. In certain areas, its color varies with the seasons. In those states harboring the white-tailed or Virginia deer, puma colora-

Fish and Wildlife Service trappers prepare to take a cougar kitten alive after their dogs brought it to bay in a tree top near Ely, Nevada.

Photo by E. P. Haddon, Fish & Wildlife Service



tion is not unlike the reddish coat maintained by this deer during the summer months. In the fall this reddish cast becomes somewhat lighter, when it tends more toward brown or grayish. It is supposed that the close similarity in color between the puma and the deer is a distinct aid to this predator in approaching deer, its favorite prey. For, the puma goes with the deer as does the bobcat with the rabbit, and the fox with the field mouse.

The present range of the puma extends from Patagonia in South America through Middle and North America to the Peace River and Cassiar Districts of northern British Columbia, Canada, a total of approximately 100° of latitude. In its original distribution which was practically transcontinental, the animal was adapted to endure not only the extreme cold of the high mountains, but likewise the humid heat of tropical swamps and canebrakes. It doubtless has had the greatest natural distribution of any American mammal.

With the turn of the present century, the range of the puma had shrunk perceptibly since the time Christopher Columbus was the first to bring this creature to the attention of Europeans. This was during his fourth voyage in the year 1502, while exploring the coast of Honduras and Nicaragua. Of course it had long been known to prehistoric man, as shown in some of our Indian pictographs, and puma skeletal remains found in ancient Indian middens.

Reasons for this shrinkage are numerous. The outstanding one is that so much of its original habitat has been completely exploited by advance of civilization and given over to agricultural pursuits, such as livestock production. Thus the peaceful asylum that most of the larger American predators once enjoyed caused these predators because of modified or destroyed habitat, which included the puma, to become public enemy No. 1, with the resulting relentless hunting and killing of these creatures throughout the livestock ranges. This came about because of the puma's hindrance to stock-raising.

Thus by the early 1930's, the range of the puma in the United States included southern Florida, where it occurred in sparse numbers; possibly northern Louisiana; and the wilderness areas west of the 100th meridian. The heaviest concentration of the animal is in the Rocky Mountain States, and southward in the desert ranges of Arizona, Texas and New Mexico. Farther west pumas are much less common, except in the coastal ranges of California, Oregon and Washington, where they are rather abundant. A total of 184 pumas are recorded taken from the area west of the 100th meridian for the fiscal year ending June 30, 1953, by Federal-State predator hunters.

With the exception of Florida, the puma is believed long extinct in those states east of the Mississippi River. However, as mentioned previously, press reports and various recent articles, tend to refute this belief. Most of the reports as to the puma's occurrence, and possibly build up in numbers in our eastern states, are based mainly on sight records by various folks. Whether these are figments of the imagination is hard to decipher. In my own experience, as I have been called upon to judge some of these reports, I have over the past ten years authenticated but three instances. These were not from states east of the Mississippi. One was from Minnesota and the others from the province of New Brunswick and Nova Scotia, Canada. In all instances, identification resulted from plaster casts made of the better imprints of tracks together with photographs taken of said tracks obtained in the field.

What about this animal's track? The puma track is generally not hard



Photo by E. P. Haddon, Fish & Wildlife Service

Mountain lions are shy and secretive. Even in lion county of the western states, they are seldom seen, prowling mainly at night.

to decipher. Once the novice has seen it, he needs no more coaching to establish the pattern in his mind. The tracks consist of a well defined wide and somewhat rounded lobate triangular heel imprint. The animal has five toes, four of them, which are lightly covered with hair, make a single confused imprint under certain ground conditions. The fifth toe on the inside of the leg, somewhat above the foot proper, never shows in the track. Hence, in good tracking ground, four well defined impressions are made at the front, roughly in a semicircle. No claw prints (because they are sheathed) are in evidence unless the animal slips and has to extend them in regaining its balance. The track of the hind foot is often placed in that of front foot when walking. It is similar to that of the forefoot, but more narrow, and the heel pad imprint is not so obvious. Its natural stride is fairly long. The average puma tracks I have measured vary between 4 inches in length by 4½ inches in width. An exceedingly large puma, such as the 217 pounder killed in the Sangre de Cristo Mountains of Colorado on January 15, 1927, made a front foot track 6¾ inches wide.

Other supposed puma tracks sent in for identification proved to be those of large dogs, such as the German shepherd, St. Bernard, Mastiff, and Newfoundland. In our Eastern States where these came from, almost mob hysteria had resulted, because the local inhabitants were sure they had the big cat in their midst. I recall too, that often the country school teacher was involved, for, it was she who had been followed by the big cat along the lonely country wayside as she trudged her way homeward. In some instances, judging by the correspondence received, these large dog tracks had caused as much excitement as did V.E. and V.J. Day of World War II.

As far as our Eastern States are concerned, the reputed comeback of the puma in them is considered more bally-hoo than truth. It would appear that if the animal is on the up as the various accounts purport, and that has been for at least the past decade, some hunter, some small town cur, for most any breed of dog can tree

one, would have certainly by this time brought in a specimen. The ease by which a puma may be treed by any small town cur was long ago (1743) remarked upon by Mark Catesby, the Carolinian historian who said of hunting with dogs "The smallest one [dog] in our company, with his master will make him [the puma] take to a tree . . ." Particularly, is this true of the South where they dog deer, a hunting procedure carried on since early colonial times. And too, there is also in our northern deer hunting states an annual tremendous hunting pressure in evidence, where thousands of hunters range afield over practically all of what is left of the old eastern puma ranges in their quest for a good rack of horns and venison. Surely among all of these thousands, one at least, should have been able to bag a specimen of the mysterious cat, if in the abundance as reported.

Another puzzling thing is that in spite of intensive rabies cooperative control campaigns for foxes carried on recently in several of the Eastern and Southern States, none of the professional hunters employed has turned in any evidence. And this person likewise has had occasion to cover much of the areas that were once the habitats of our big cat.

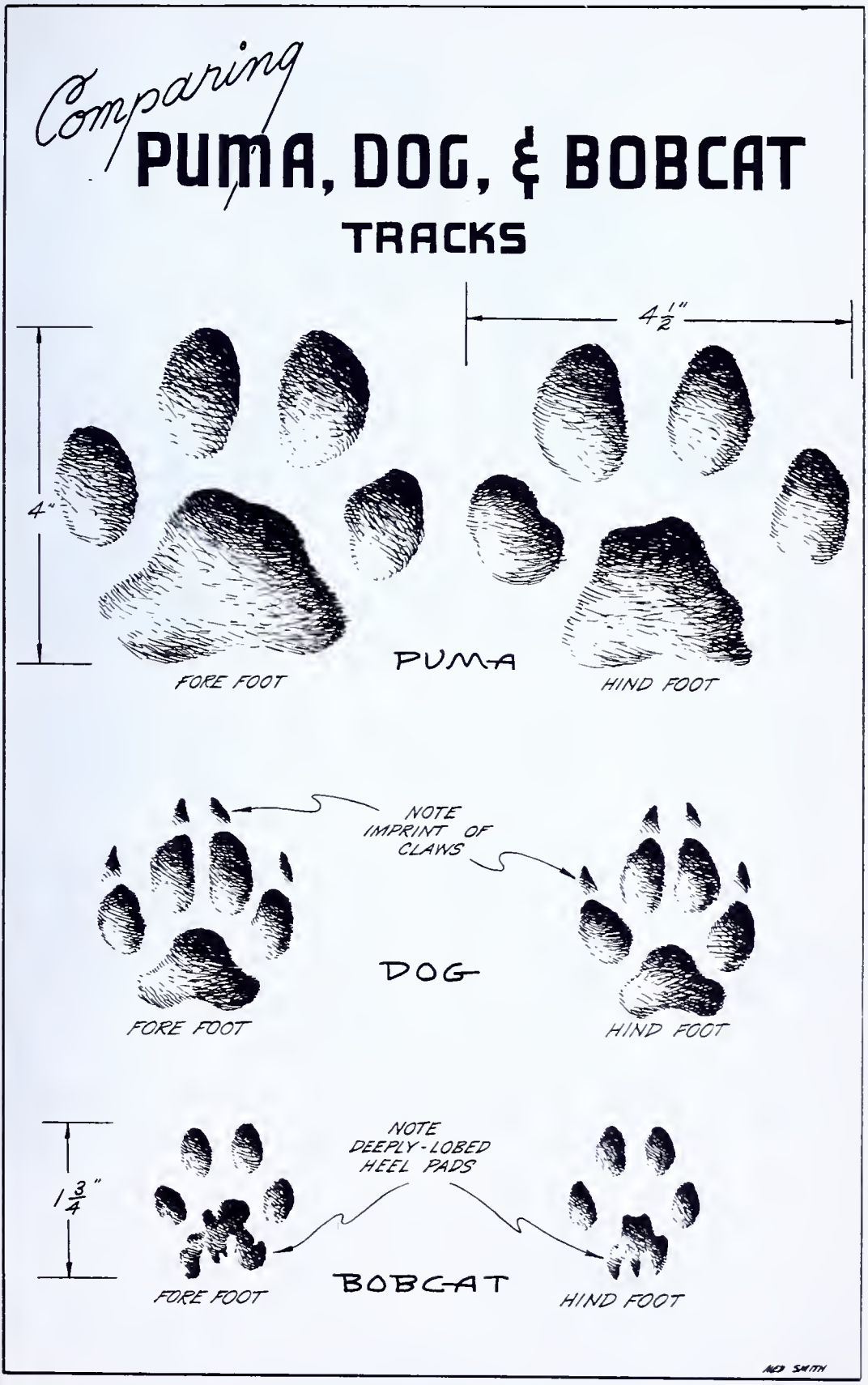
While the puma is rarely seen by man, even where it occurs in goodly numbers, and it is known to be very elusive, still there are many records of where it has followed man. This approach seemingly is out of curiosity. A few notable instances that have occurred in different geographic areas are given for their interest. Charles Cornish avers that the animal sometimes "seeks the society of man," and then describes an observation in British Guiana of a puma actually spending the night under a hammock. The noise that emanated from beneath the hammock, which its human occupant had blamed on croaking frogs, in reality was "probably the purring of the puma, pleased at occuping the 'next berth' below a man" according to the Indian guides.

E. A. Preble, one of America's leading naturalists, gives an account of a puma's possible interest in man. While camped at Parlance Lake, Oregon, a puma visited his camp, passing within a few feet of "our beds" where its tracks were found in the morning.

The late Major E. A. Goldman, another renowned American naturalist was trailed in broad daylight by a puma while hunting mountain sheep along the crest of the Charleston Mountains in Nevada. He believed the animal was doubtless prompted merely by curiosity, and that he had at no time been in danger of attack.

With regard to the puma near the close of the 19th century the late Frederick W. True, then Curator of the Department of Mammals, Smithsonian Institution, in summarizing what was known of puma abundance in the various states and Canadian Providences had this to say of Pennsylvania in 1891:

"Audubon stated that the Puma was abundant at the headwaters of the Juniata River in 1851. (Audubon and Bachman, Quadrupeds of North America, II, 1851, p. 311.) McMurtrie states that a woman was killed by a Puma in Pennsylvania in January, 1830. (Cuvier's Animal Kingdom, I, 1831, p. 115.) (See also *Forest and Stream,* III, 1874, p. 67. Berks County). Mr. Hallock states that Pumas were to be found in Cambria County, near Ebensburg, in 1877; also in Elk County, near Ridgway. (*Sportsman's Gazetteer,* 1877, p. 140.) Mrs. B. H. Warren writes me that Puma was killed in the northeastern part of the State about fifteen years ago, and adds: 'It is asserted by apparently reliable persons (hunters) that a few of these are yet to be found in Cameron and Potter Counties.'"


Comparing
PUMA, DOG, & BOBCAT
TRACKS
4 1/2"
4"
FORE FOOT
PUMA
HIND FOOT
NOTE IMPRINT OF CLAWS
FORE FOOT
DOG
HIND FOOT
1 3/4"
NOTE DEEPLY-LOBED HEEL PADS
FORE FOOT
BOBCAT
HIND FOOT
NED SMITH



More than ½ century has passed since True's summary, and those in position to know aver that the puma has been nonexistent in Pennsylvania for at least three decades. That would be since about the 1920's. If the record is true, the puma held on some 237 years after it was first recorded, according to the literature, by William Penn in August of 1683. Its last stand in the state appears to have been in the Allegheny Mountains, which of course would be expected in view of the suitable puma habitat these mountains contain.

There is reason to believe that the occasional puma reported seen from time to time in our Eastern States, including Pennsylvania, may have come as a liberated creature from some small traveling circus. It is known that because of lack of patronage it is not unusual for these small "fly by night" wayside animal shows to go broke, fold up, in the course of making their planned season's itinerary. When such happens, some of these small circuses are prone to turn loose certain of their native specimens, rather than kill them off. Humane reasons, and the financial burden of maintaining them dictate such procedure. So, it is possible some of our reported eastern pumas are introduced by this procedure.

Then too, it is not improbable that another source comes as escapees from people bringing young western pumas to the East as pets. An eastern tourists make the rounds of western states, such mammals as bobcats, wolves, bears, and pumas may often be purchased as prospective pets, taken back East, either to become, in time, a nuisance, a gift to some friend's youngsters, or deliberately turned loose into the wild. Some of the recent coyote invasion in the East has certainly come by such a method. To avoid such actions, some of the States, notably New Jersey, have legislated prohibition against such practices making anyone liberating a coyote liable to a fine of $100 for each offense.

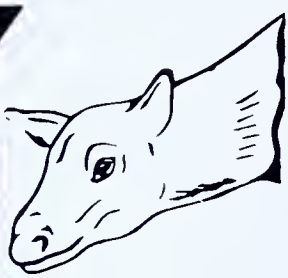
As far as this writer is aware the only eastern region still containing the puma in sparse numbers are limited to the Canadian Provinces of New Brunswick and Nova Scotia, and the State of Florida.

Many conservationists maintain the hope that the puma might eventually gain some of its original foothold in several of our Eastern States. This writer is in full accord with such a hope. For, it is felt, except where such of its regained habitat might present a pressing economic problem, there still remain areas east of the Mississippi River of considerable size, where the puma could exist with little molestation because of its effect on man and his agricultural pursuits. It could be so controlled when and where becoming out of bounds to present but a minor problem. Its presence might help in management plans for our surplus deer, besides regaining a permanent place in the fauna of some of our Eastern States.

P115



ELK



LIVE HERE DON'T SHOOT ELK IN MISTAKE FOR DEER





Pennsylvania Game Commission

Elk Live Here!

By Roger M. Lathan, Chief, Wildlife Research Division

THE American elk, or wapiti, was originally native to the vast reaches of forest land across Pennsylvania, and the species ranged over



Photo by Bob Ford

The bull elk is almost a dirty white except for his chocolate brown head and neck. He may weigh more than 1000 pounds.

most of the United States and southern Canada. The greatest concentrations in Pennsylvania seemed to be in the mountainous central portions and the Pocono region of the northeast. During severe winters, the herds were sometimes forced down into the lower reaches of the Allegheny, Susquehanna, and Delaware river valleys. Pennsylvania's elk apparently reached a greater size than those in most other parts of the range, and some tremendous trophy sets of elk antlers still exist in mute testimony to these former monarchs of the forest.

Although extremely abundant at the time of the first settlements, by 1750 the elk were already showing the effects of persecution. Like so many other big game animals, they were slaughtered by the thousands without thought of the future. Many were slain merely for the hide and the souvenir "tooth." Early records of elk in the Keystone State are few and sketchy, but Peter Kalm reported that elk were still being killed in large numbers on the present site of the city of Philadelphia as late as the middle of the seventeenth century. William Penn reported some in that vicinity when he arrived in 1762.

Seton tells of an animal roundup in Snyder County in 1760 during which 111 buffalos and two elk were killed. This ratio would indicate that elk were already becoming scarce along the Susquehanna.

By 1800, the wapiti was no longer to be found in southeastern Pennsylvania. It was a rare sight in the Cumberland and Blue Ridge areas of southcentral Pennsylvania and west of the Allegheny river. However, the Poconos and the Allegheny Mountain and Allegheny Plateau regions were still well stocked. But by 1830, the elk were gone in the southwestern corner, and between 1835 and 1845 they disappeared from the Pocono region in the northeastern part of the State.

The last real stronghold for the elk was the section lying between the headwaters of Bennett's Branch of the Susquehanna and the Clarion



Photo by Bob Ford

This cow elk, a member of Pennsylvania's small but completely wild elk herd, was "shot" legally by a trap camera.

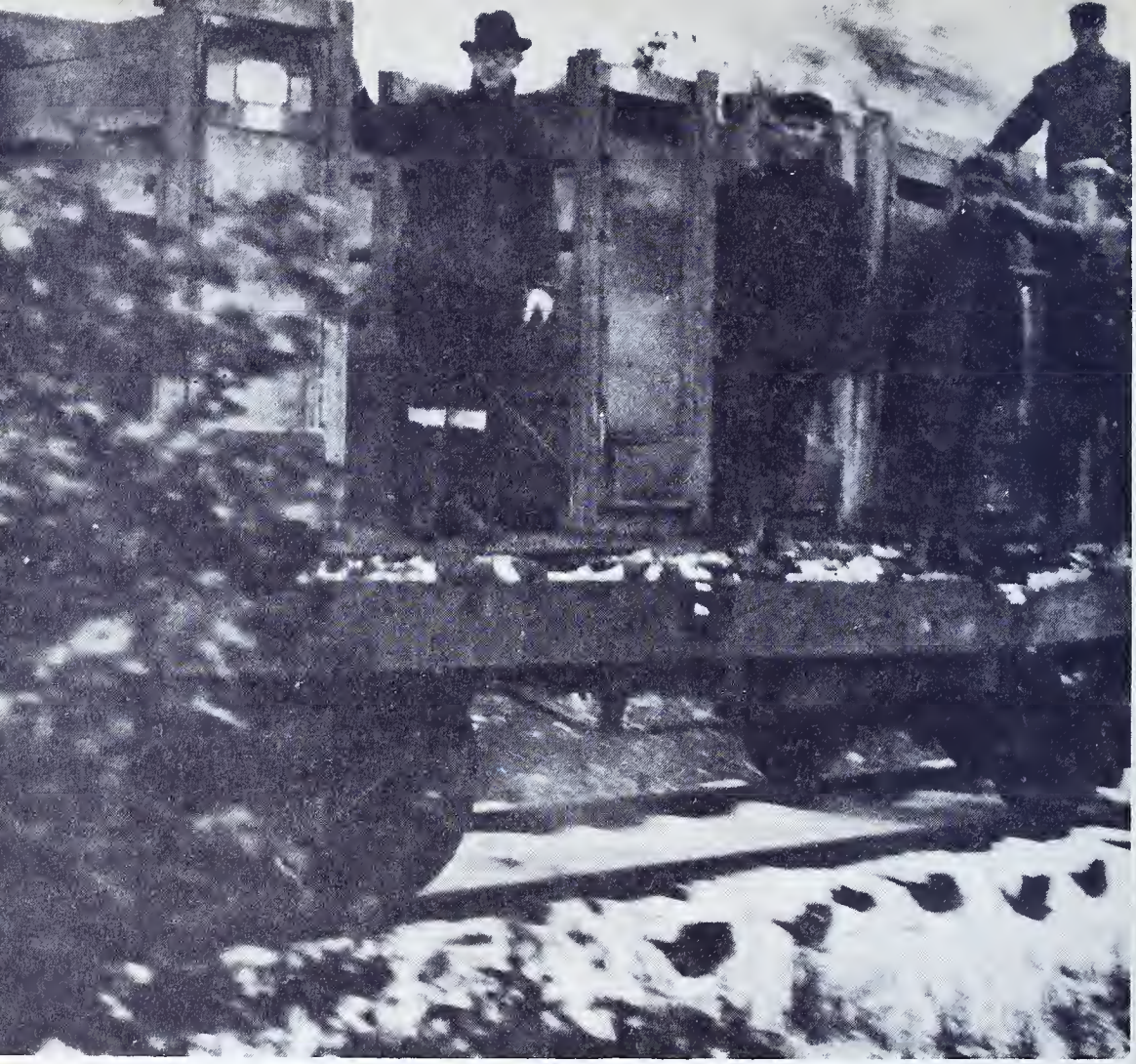
river to the west and north. Elk County, established in 1843, received its name from the presence of this last native herd. During the winter of 1852, a herd of twelve yarded along the Clarion near the present site of Ridgway. Two Indian trappers killed seven of these animals, and that apparently was the last time that a band of native elk ever yarded in Pennsylvania.

Along the headwaters of the Clarion, the wapiti made its last stand. There, in November 1867, Jim Jacobs, a full blooded Indian, killed the last Pennsylvania elk. Extermination of a magnificent game animal was complete. Man, the Destroyer, must have been proud of this accomplishment!

Less than fifty years later, Man, now the Conservationist, attempted to atone for his greed and thoughtlessness by reintroducing the elk to Pennsylvania. The first releases were made in 1913 when 50 head were obtained from the Yellowstone National Park in Wyoming and 22 from a private preserve in Monroe County. The western elk were divided equally between Clearfield County and Clinton County. Twelve of the Monroe County animals were released in the same county and 10 in Centre County. At least 14 of the Yellowstone elk died shortly after arrival and a portion of the survivors wandered as much as 40 miles within a week. Those from the private preserve travelled as much as 20 miles in a few days.

Although no additional releases were made in 1914, a number of calves were reported during that summer. Also, some crop damage complaints were received. At least five elk were shot illegally during the year.

The following year, 95 animals were obtained from the Yellowstone and stocked in Potter (24), Cameron (24), Carbon (24), Forest (10), Blair (7), and Monroe (6) Counties. With this beginning, they began to increase, and a herd of twenty-five to thirty



PGC Photo

Elk live-trapped in the Yellowstone National Park, Wyoming, made the long rail voyage to their new Pennsylvania home on these flatcars. First importations were made in 1913.

appeared in Blair County some distance from the nearest release site. Property damage complaints also increased and a number were killed to protect crops each year.

These animals had become sufficiently abundant by 1923 for the Game Commission to establish an open shooting season from December 1 to 15. Only bulls with four or more points to one antler were legal game, and it was unlawful to hunt them by driving. Only still hunting was permitted. These open seasons were an annual affair from 1923 through 1931, but the elk has been given year-round protection since that time.

During the first season, 23 bulls were killed legally. The next year only 10 were killed, and in 1925 just 6 were taken. The figures rose again in 1926 and 1927, however.

Six bull elk were purchased from South Dakota in 1924 and 6 more in 1926, and all were released in Elk County. A few other elk were stocked by private individuals prior to 1930. In spite of these additions, the kill dropped off gradually from 1927 until in 1931 only one was taken.

Altogether 177 elk were released, and 176 were recorded killed either in season, illegally, or for crop damage. Only 56% of the total number killed represented legal bulls taken during the open season.

The history of this introduction in Pennsylvania shows that elk increased at a good rate from 1913 to 1923, began to level off from 1924 to 1927,

and have lost ground since that time. There are several good explanations for this ultimate failure. During the early years, the brush forests and mountain farms offered near-ideal food and escape cover for the animals. Also, at that time, there was little human interference in the mountainous areas of the State. Later, the brush forests were replaced by larger trees which limited the amount of browse available to these animals. And an ever-growing deer herd provided more and more competition for the depleted food supply. With the introduction of modern farming methods and better transportation facilities, the hill farmers were less tolerant of crop damage, and began to kill these large animals in quantity. Over the years, too, the number of hunters increased tremendously and more and more wapiti were killed illegally by careless deer and bear hunters. An extension and improvement of the highway system by the Highway Department and the Civilian Conservation Corps, opened up this vast wilderness to the general public. The elk could no longer find solitude in Pennsylvania. Because it is a "high-strung" animal, this constant disturbance may have been an important factor in the low reproductive rate of recent years.

But even now, it cannot escape the hoodlum hunter. During the 1953 deer season, five of the preciously few remaining wapiti in Pennsylvania were wantonly killed. No one could mistake a majestic bull elk with antlers six feet high for a whitetail buck. A Pennsylvania buck rarely weighs more than 150 to 200 pounds and would probably have antlers no more than 12 to 15 inches above his head. The bull elk is almost a dirty white except for his chocolate brown head and neck and may weigh more than 1000 pounds. A whitetail buck can walk under an elk's belly without having to squat. There is no more excuse for a "mistake" of this kind than there is for the lawless individuals who shoot bears in deer season.



Photo by Lenze Studio, St. Marys

Illegal slaying of Pennsylvania's largest and most picturesque animal was climaxed by the killing of this bull elk near Truman, Cameron County during the first week of the 1953 deer season.

The tiny remnant still hanging on in Cameron and Elk Counties probably numbers between 50 and 100 animals. Most of these are located in the Hick's Run area a few miles southwest of Emporium. This herd seems to be holding its own, but few calves are sighted. Probably the illegal shooting comes close to removing the annual increase.

But nevertheless, we will still have a token population of these magnificent big game animals, and the clarion-like bugling can still be heard reverberating from mountain side to mountain side along the upper reaches of Hick's Run. The Game Commission would like to retain the elk as a permanent member of the State's fauna, but must have the cooperation of the people to accomplish it. In all probability the elk will never again become sufficiently abundant in Pennsylvania to permit shooting, but the sight of a regal bull or of a band of cows can add immeasureably to a day afield in Penn's Woods.

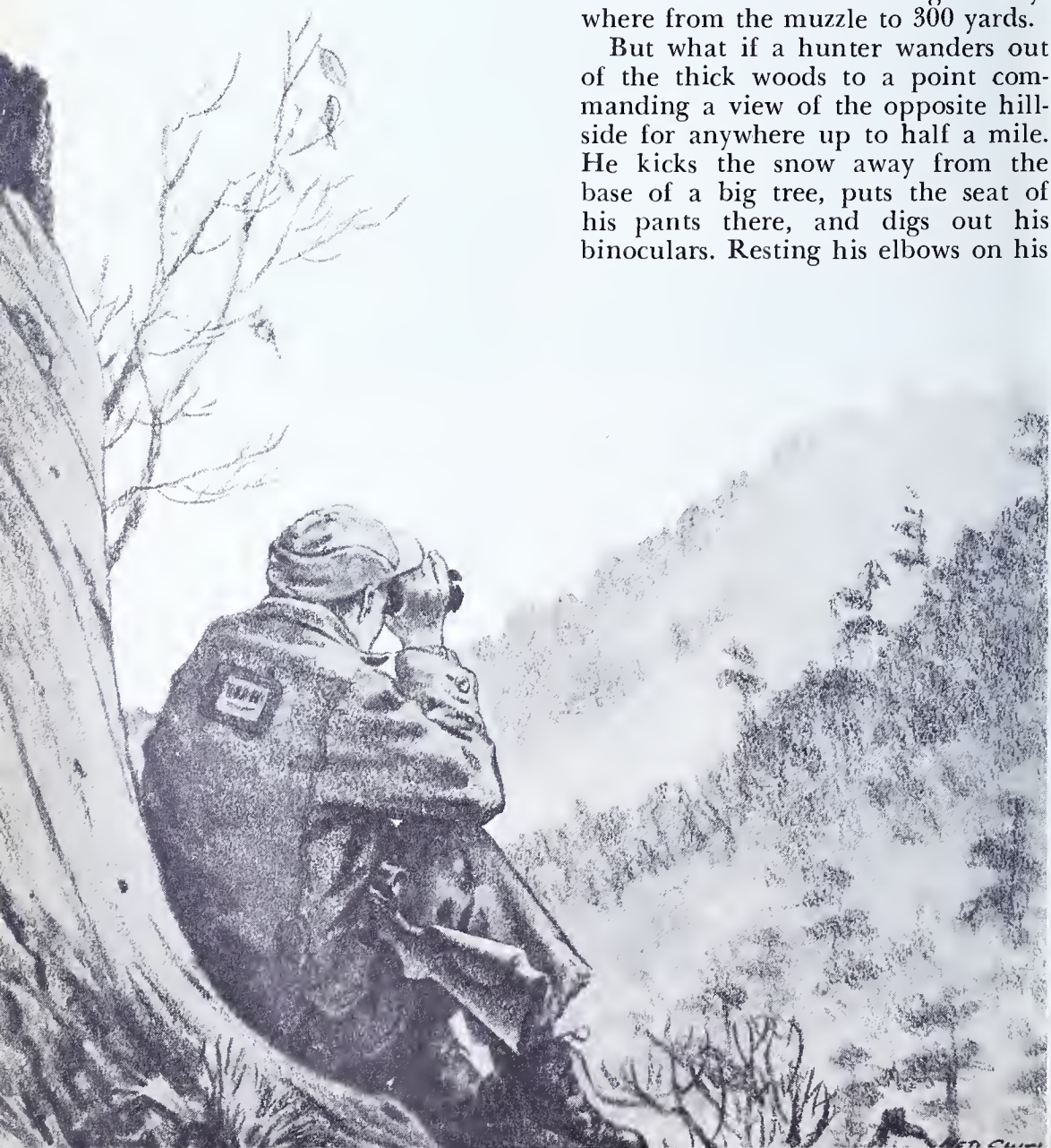
How Far Is It?

By Robert S. Bell

ONE of the biggest problems confronting the big game hunter is estimating the range from his position to that of the game, when the game is somewhere beyond three hundred yards.

With the modern high velocity cartridges available today, in a good, stiff bolt action rifle with suitable scope sight the trajectory of the bullet over the first three hundred yards or so can be largely disregarded when the target is deer size or larger. For instance, using a .270 Winchester with 130 grain factory load zeroed at 200 yards with a 4 power scope, the bullet will be a couple of inches high at 100 yards and less than a foot low at 300. A high hold on the shoulder of a deer will make a killing hit anywhere from the muzzle to 300 yards.

But what if a hunter wanders out of the thick woods to a point commanding a view of the opposite hillside for anywhere up to half a mile. He kicks the snow away from the base of a big tree, puts the seat of his pants there, and digs out his binoculars. Resting his elbows on his



knees with his back solidly against the tree he proceeds to examine the opposite hill.

Finally he picks up a bunch of deer and the glasses show that one of them is a nice buck. They're a long ways off. Without the binoculars he can't even tell which is the buck and which are the does. But this is his last day to hunt and chances are he won't see another legal buck before dark. Slowly he picks up the .270, checks the load in the chamber, and moves a few steps to squat behind a down log. He runs his arm through the sling and rests the back of his hand on the log. It's almost as good as a bench rest. The deer are picked up in the scope and the sun glints off the rack of the buck like bits of gold in the crystal clear scope. The cross hairs move onto his shoulder, jarring slightly with his heartbeat, then wander up, pause at the backbone in indecision, move higher still and hesitate again. "Where in blazes shall I hold?" the hunter asks himself. "How far is that fella, anyway?"

That is the sixty-four dollar question. When the chips are down and time is running out and success or failure of the whole trip hinges on one shot, the question is—how far is it?

Even if the hunter has spent hours on the range learning the trajectory of his favorite load over all ranges to five or six hundred yards, learning how the point of impact varies with different positions and sling tension, learning even that a change in temperature or atmospheric conditions will make a difference in where the bullet hits way out there, the unknown factor still remains. How far is it?

When the range is more than a couple of hundred yards, it is next to impossible for the average hunter to judge distance with any degree of certainty just by observation. Some kind of range finder must be used, and it must be small enough to carry and sufficiently accurate for practical use.

The simplest and best known means of estimating range is by the use of the scope reticule. Cross hairs are not as much use in this method as the flat top post or center dot reticule. Of these two, the dot is better because it does not cover up the target when holding over for a long shot.

If we have a dot reticule of known size, say four minutes of angle, which is about four inches for each hundred yards of range, and krfow the approximate size of the game being hunted, it is a simple matter to estimate the range with a high degree of accuracy. Take the fellow with the .270 for instance. If he had a four minute dot in his scope and it just covered the shoulders of the deer he would know that the range was approximately 400 yards as a big buck will measure about sixteen inches from backbone to brisket. Knowing this, and the trajectory of his load, it would be a simple matter to hold over the correct amount to drop a slug into the chest area.

A few words about dot reticules, though. Most shooters seem to want to get them too small, even as small as 2 or 3 minutes of angle in a 2½ power scope. This may be all right for desert or open plains shooting where the light is excellent but for use in deer woods this is entirely too small.

After using dot reticules in a number of scopes ranging from 2½ to 18 power we have reached some conclusions as to what sizes are best for our own use. Opinions differ and everyone is welcome to his own but unless you have the time and inclination to experiment with a large assortment of scopes and dots perhaps these findings will be of interest.

In the 2½ power hunting scopes for use under average conditions in the woods a dot should be at least 4″ at a hundred yards and 5″ is better.

I have one scope with a 4″ dot but it is too small to be picked up rapidly on moving game in dark woods. This is a very bright scope, too, with better light transmitting power than many on the market. When I put a 2½ power scope on my short barrelled .348, I specified a 6″ dot and it is the nearest thing to a perfect woods outfit I've ever seen.

It should be remembered that areas of circles are directly proportionate to the squares of their diameters. Therefore, a 6″ dot has over twice the area of a 4″ dot although its diameter is only half again as big.

Some might think that 6″ is too big and will cover up too much at long range, but a deer would have to be well over 200 yards away before the dot would cover his shoulders and few deer are seen that far in the woods.

In the 4 power scopes a 4″ dot is about perfect and in the 6 power 1½″ to 2″ will be suitable. Many hunters who use the 6X scopes get a 1″ dot but after using them awhile, especially against dark backgrounds such as spruce or pines, they decide they are too small. In such cases many condemn the reticule when the fault actually lies in the *size* of the reticule. This small size dot may be all right on crows but as a 6X scope is only about a 200 yard outfit on this small a target the dot could still be larger without covering up the aiming point of one of these black rascals.

In my own 6 power scope I have a 2″ dot and it works perfectly. When I had this dot installed I thought I wanted a 1″ size, but the maker talked me out of it and recommended this size. Eight years of using this scope on at least a dozen different rifles ranging from the Wasp to several wildcat magnums have shown me how right he was. I've used it on squirrels with reduced loads in a .22-250 and at present it is on a



A 4″ DOT COVERS A DEER'S SHOULDER AT 400 YARDS

blown-out, necked-down .348 case shooting a 7mm bullet. It does a top notch job both places and if I had to get rid of all my scopes but one, this is the one I'd keep.

In scopes of 8 power or higher a 1″ dot is suitable and in very high powers even smaller sizes can be used although not needed for varmint shooting. Bench rest shooting is another matter, but anyone who is enough of a gun nut to be tangled up in that business doesn't need any advice about equipment.

* * *

An enraged elephant will fell a man with his trunk, gore him with his tusks, trample on him, then fling the body 75 feet or more away.

* * *

The short-eared owl contradicts about every popular concept of owl traits and habits. It frequently hunts its prey in broad daylight, almost never perches in a tree, and prefers open fields and marshlands to the woods.

* * *

The peacock is a native of India where it is held in great reverence by the Hindus.

* * *

If you're good enough marksman, you can kill a puma, brown tiger, cougar, catamount, silver lion, purple panther, mountain screamer, American lion and mountain lion all at the same shot. There is no particular trick about it for all these are common names for a single animal, the felis concolor, generally known as the mountain lion.

The Road to Conservation

Strip Cropping . . . Pennsylvania's Symbol of Soil Conservation

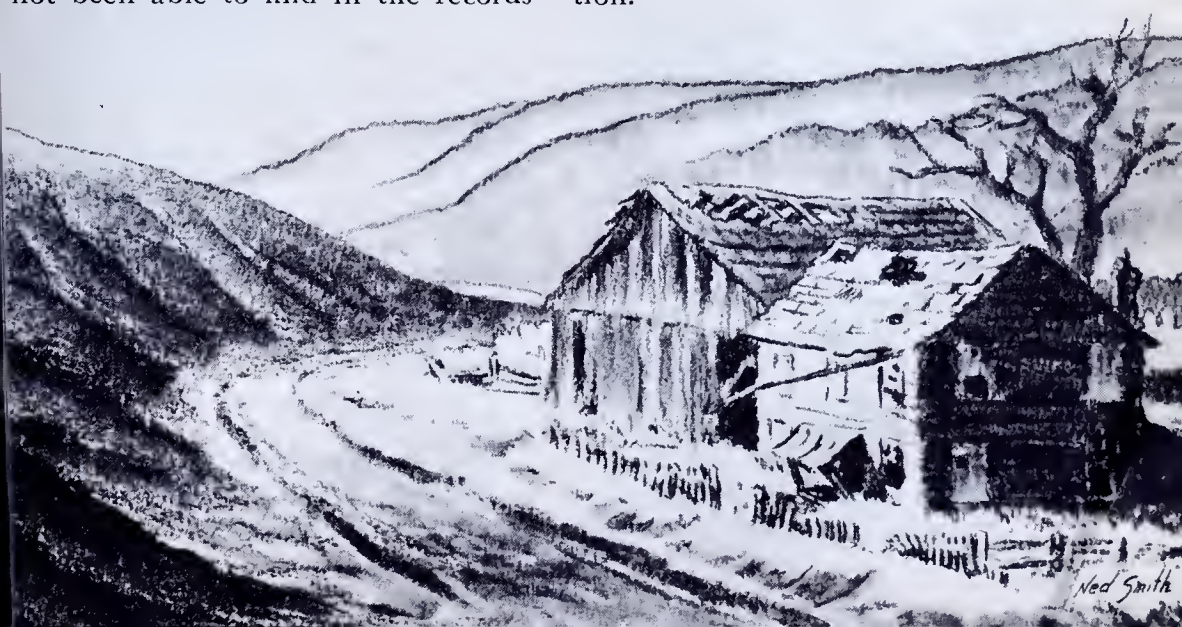
By Ivan McKeever

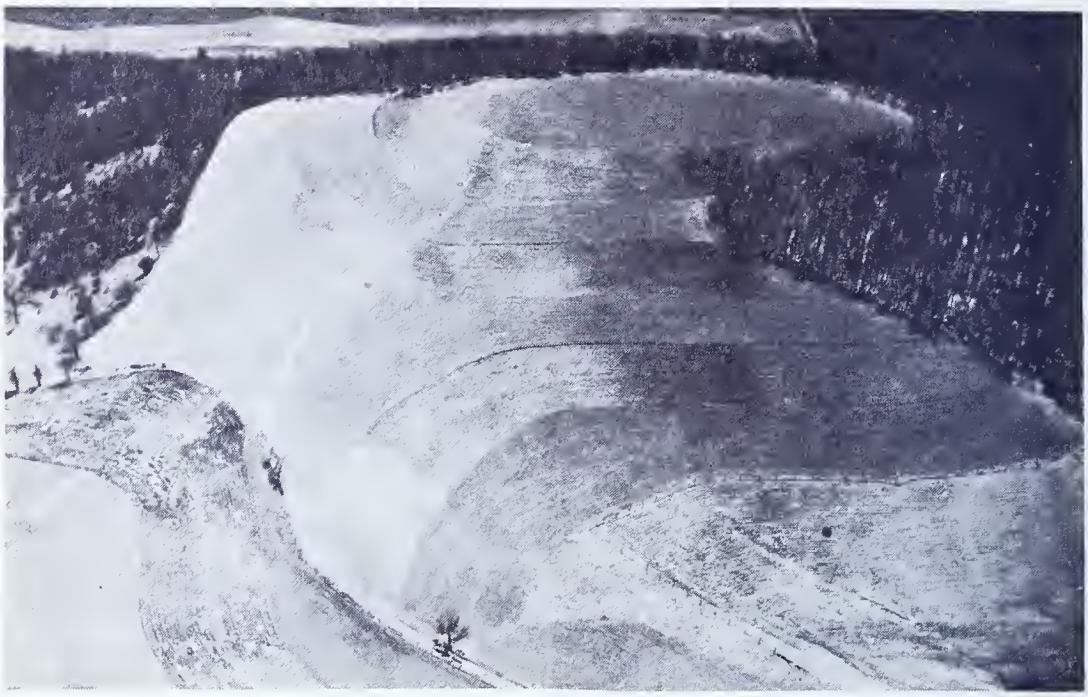
STRIP cropping has been accepted by many as the emblem or symbol of soil conservation. The sloping cropland of Pennsylvania is rapidly being covered with this important conservation practice. Each year thousands of acres of strip cropping are being added to the total.

On "The Road to Conservation," we have devoted one article to the importance of proper land use. Then, in logical sequence, we dealt with the subject of water disposal systems so necessary in developing complete conservation programs. The article on water disposal systems was entitled, "Terraces—Past and Present." With the first decision in conservation planning being land use determinations and the second, water disposal systems, we are now ready to move on to the planning of additional practices. Since we usually consider strip cropping layout early in farm conservation planning, it would appear proper to consider it as next in this series.

Strip cropping is not considered an ancient practice. At least we have not been able to find in the records where it was used to a wide degree, by the peoples of earlier periods. The practice was undoubtedly brought to this country from Europe where it has been in use for many years. Strip cropping seems to have been first used in this country in southwestern Pennsylvania, northern West Virginia and in the area across the river from West Virginia's northern panhandle in Ohio. We read that strip cropping was used in this section for almost fifty years but even here it was not used to any great extent for only a few farmers followed the practice. Farmers in certain areas of Lycoming, Lackawanna and other counties of northeastern Pennsylvania used strip cropping for an equivalent period of time. Here too it was practiced only by a small percentage of the farmers.

The widespread use of strip cropping in this country began in about the mid-thirties with the coming of soil erosion projects and soil conservation districts. Since then, the practice has spread rapidly until we have rightfully come to consider strip cropping as the symbol of conservation.





SCS Photo

Strip cropping on the Joe Peters' farm, one-half mile north of Beech Creek in Clinton County. This type of scene is becoming more common in the beautiful mountain valleys.

The benefits of strip cropping are two-fold. The strips establish a contour method of farming, that is, farming on the level. This causes every plow furrow and cultivator mark to become a miniature dam, to catch and hold water, rather than a potential gully. The second benefit is brought about by the alternate strips of row crops and close growing crops. The water and soil moving off the tilled strip is slowed down in the strip of close growing grass and the soil has a chance to filter out. Also, the slower movement will cause more water to soak into the ground.

METHODS OF LAYOUT

There are many methods used in laying out strip cropping. We will consider five methods used most commonly in Pennsylvania: *Contour strip cropping* is laid out with both edges of the strip on the contour. This provides the maximum protection and is one of the methods most widely used. With this type we come more nearly to perfection in the real objective of strip cropping since we make every plow furrow and cultivator mark a true dam. Contour strips will not be uniform in width and there will be short rows when the strips are planted to row crops. Consideration should be given when laying out true contour strips to the kind of crops that will be grown. Crops requiring spraying should be planted so that there are multiple rows equivalent to the number of rows that can be handled by the sprayer. Many farmers who grow potatoes or other crops that require spraying plant the long rows to the regular crop and the short rows to some other crop that does not require spraying. In the production of corn the short rows are most often left in the center of the strip where they are easier to cultivate and harvest. Most of Pennsylvania's sloping cropland needs this type of strip cropping for effective results.

Uniform width strips are laid out from a baseline. The baseline is often located in the most representative part of the field with uniform strips being laid out up and down the slope

from the baseline. Usually these strips are about 100 feet in width but there is no reason why they cannot be varied provided they never get much over 100 feet. When these strips get off the contour too far correction strips are often used to bring them back more nearly on the contour. These correction strips can be left in hay for longer periods than the other part of the field and when plowed can be used in regular rotation or seeded back to close growing crops. This type of strip cropping is not as effective as contour strips because of its tendency to get off the contour or level. When using this method of strip cropping the strips that are laid out down the hill from the baseline will lead the water from the non-critical to the critical part of the field where erosion if oftentimes intensified. Also, in the end we have the same difficulty with the uneven parts of the field that we have with contour strips without at the same time the benefits of true contour.

Field strip cropping usually provides for laying out the field in straight, uniform width strips parallel with the fence or field boundary. This is not an effective method of strip cropping in most cases and in some instances probably causes more trouble than if no strip cropping was applied at all. Very often the water is led to, rather than away from, critical areas. This method of strip cropping is not used to any great extent in Pennsylvania.

Graded strip cropping is especially adapted for use on imperfectly drained land. Many of our soils have a hard-pan starting from ten to twenty-four inches below the surface. This hard-pan prevents free movement to water down through the soil. In planning conservation programs it is necessary that this water not be held on the land but led off gently. Strip cropping, laid out on a 1% grade is much more effective on this kind of land than absolutely true contour strip cropping. Graded strip cropping on approximately 1% grade is a big help in erosion control and at the same time leads the water away thus making it possible to improve the situation caused by imperfect drainage. Many cases have been reported where fields have become too wet when contour strip cropping has been installed but after graded strip cropping has been properly laid out similar situations have been prevented or corrected.

Strip cropping to supplement terraces and diversions is a common practice in Pennsylvania's soil conservation districts. In using strip cropping with a terrace system greatest benefits come from laying out the strips so that the strip border will fall midway between the terrace ridges. This causes each area from terrace ridge to terrace ridge to be broken into two strips. The terrace ridge will become the center of the strip and the strip therefore will have the same width as the terrace interval. Tillage should be parallel with the terraces which will cause the short rows to fall partly at the upper side and partly at the lower side of each strip. The use of strip cropping with diversion terraces is more widely used in Pennsylvania than strip cropping with regular terraces. In fact, the usual practice on sloping cropland is to lay out the diversion terraces and waterways and then fit the strip cropping to this system. Where diversions are needed the strip cropping should never be laid out until the location of the diversions and waterways have been determined, otherwise difficulty will be encountered in getting diversions established without disrupting the strip cropping layout and sequence of rotation. After the diversion terraces have been designated with proper consideration for a filter strip above the diversion, we are then proper in proceeding to establish strip cropping by one of the methods previously discussed.

Wind strip cropping is not used in Pennsylvania but is used rather extensively in the Great Plain states. The objective here is to run the strips at right angles to the prevailing winds.

We can expect the practice of strip cropping to become even more accepted. The popularity of the practice is spreading rapidly among farmers. The technicians of the Soil Conservation Service working in Pennsylvania are having difficulty keeping up with all requests of farmers wanting conservation practices. Strip cropping is one of the most popular of these conservation measures.

Strip cropping is an important conservation practice but there is a limit to what it can do. Even where installed by the best methods, it cannot hold back all of the water during heavy rains. Strip cropping prevents erosion and water losses to a degree; however, it is only one of a number of practices that should be used in combination to completely control erosion. We should use strip cropping to assist in holding all the water on the land that we can plus a water disposal system consisting of good waterways, terraces, and/or diversions to lead off the surplus.

The farmers of Pennsylvania can well be proud of the record that they have made in conservation. I feel most confident that they can challenge the farmers of any other state to show a better pattern of strip cropping on the land than we have here. Air transportation is making it possible to see where conservation work is really moving ahead. We, in conservation activity, can no longer excuse ourselves by saying our best conservation work is on the back roads because air transportation gives a complete view of the entire countryside. According to recent reports of the 185 soil conservation districts in the twelve northeastern states, the thirty soil conservation districts in Pennsylvania have accomplished approximately 97% as much strip cropping as the districts in the other eleven states combined. The Soil Conservation Service technicians assisting soil conservation districts and the ACProgram in recent years have reported the installation of more than 300,000 acres. This strip cropping has been accomplished in working with more than 20,000 farmers. However, many of these 20,000 farmers do not have strip cropping on their land. The Agricultural Extension Service of the Pennsylvania State University has assisted farmers in installing over 8,590 demonstrations of strip cropping which involve almost 300,000 acres total. The Vocational Agriculture instructors have assisted young farmers and others in installing a considerable amount of strip cropping. Technicians of the Pennsylvania Game Commission have also assisted farm game cooperators in installing strip cropping. Altogether we can safely say that we have at least 600,000 acres of strip cropping established in Pennsylvania. Now we might ask the question, just how much strip cropping is this? Let's express it in a little different way than from the standpoint of just straight acres. If this amount of strip cropping was in just one field across Pennsylvania it would make a field 300 miles long stretching all the way from the Delaware River on the east to the Ohio border on the west. The field would be over three miles wide, or, about 163 strips.

Suppose we look at it in another way. Should we start due west with a strip 100 feet wide just how far would all these strips in Pennsylvania reach? The answer is, they would reach almost three times around the world at this latitude. Or, expressing it in even another way, we could have a field across the United States from coast to coast sixteen strips wide. Because of the accomplishments of the farmers in Pennsylvania in installing



SCS Photo

A view of Chester County's rolling hills. This scene near Kennett Square shows strip cropping on the G. Albert Mershon 146 acre dairy and poultry farm.

this important conservation practice it seems entirely proper to again refer to strip cropping as the symbol of conservation.

Strip cropping is not only an important practice to hold soil and water and to make farming easier but it is without doubt the most important conservation practice from the view point of wildlife habitat. The principles of edges in wildlife management and of changing cover have long been recognized as important by wildlife technicians. Hunters and sportsmen alike have discovered how strip cropping with its varying cover improves wildlife conditions. Then too, it makes hunting even more of a sport and a novelty. With 600,000 acres of strip cropping we produce approximately 50,000 miles of edges or enough to reach twice around the world at the equator. All of this has been accomplished by Pennsylvania farmers in a relatively short time.

We have no alternative but to be encouraged with this kind of accomplishment but at the same time we realize that there is much left to be done in the field of conservation. The natural love of their land by most Pennsylvania farmers is making the job of conservation easier. This will have a direct bearing on speeding up the day when there will be a complete conservation program on every Pennsylvania farm.

* * *

For parental energy in looking after its young, the house wren has all other birds topped. One wren was recorded as having fed its young 1,217 times during the daylight of one day.

* * *

Ducks have an almost telescopic eyesight. They can focus their eyes for near or far vision.

* * *

The killer whale is known as "Tiger of the Sea" and is afraid of neither man nor beast. It will attack anything that swims. They even eat the tongues of living whales. The male killer has a huge scimitar-shaped dorsal fin six feet high and as the beast swims, just at the surface, the waving fin looks like the neck of a serpent. This is responsible for most of the sensational sea-serpent stories. It is not afraid of boats or small ships.



He Who Laughs Last

ELK COUNTY—I received a letter from a character within my district requesting that I stop to see him concerning deer damage. Upon visiting the residence, the man of the house was not about so I talked with his wife concerning the damage complaint She informed me that to date they had not suffered any damage by deer but wondered if they could shoot a deer in the event that it crossed their land, and retain same for food. They could not be classed as farmers as they only had a garden in comparison to that of any four member family. To make things a little more attractive to lure the deer on their lands, was a small patch of buckwheat about 20 feet high and 15 feet in length. Upon hearing all her troubles, I informed her that in the event that the deer did do material damage to her garden she would be within legal right to kill same, but could not retain the deer for food. This made her very unhappy. I informed her that if she needed a deer that badly that I would supply one that was killed on the highway or other causes at the earliest possible date I received one. Her husband did not like the idea very well so decided to take things into his own hands. So, on a nice dark evening he cast the ray of an artificial light out over the small buckwheat patch. Sure enough he spotted a pair of shining eyes. He pulled up his double barreled shotgun and cut a round loose. He hurried over to the patch of buckwheat to reap his harvest, and to find to his amazement that he had shot his own milking cow. At this point he was very much upset; however, I kept my word and delivered him a road killed deer.—District Game Protector Gerald Kirkpatrick, Portland Mills.



From Fayette to Carthage

FAYETTE COUNTY—I received a very interesting communication last February from Mr. Latimer, Supervisor, Waterfowl Coordination, stating that a hunter near Carthage, North Carolina, had killed three banded mallard ducks near Carthage, with Pennsylvania Game Commission bands on their legs. The birds were released at five weeks of age in Springfield Township, Fayette County, in May 1953. I checked the little band from time to time through the summer and they were all there up to hunting season, when some of them were killed where they were released. Now these three show up several hundred miles south, where they had evidently migrated with some others. It will be more interesting to see if any of the ducks raised here return to nest where they were raised.—District Game Protector J. F. Blair, Mill Run.



It Says Here

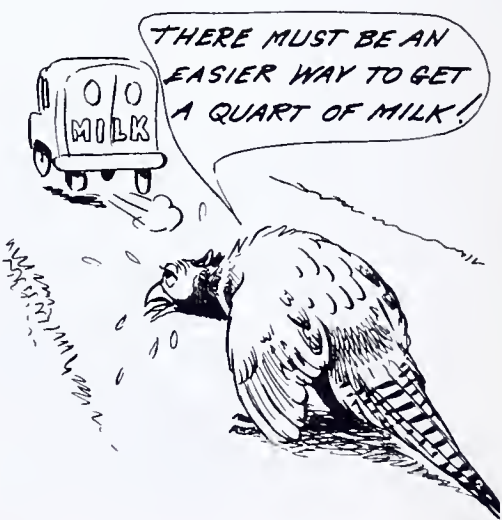
BERKS COUNTY—While assisting sportsmen to clean up the Propagation Area at Lake Ontelaunee, I saw a rather unusual sight. A fisherman and his small son were taking time to read the Propagation Area signs. This might not seem unusual to anyone but a Game Protector. Most of our experience seems to be with fellows like the one who stopped his car during the deer season to look at a State Game Lands sign from the road. He got back in his car without reading the sign, then drove all the way home to telephone me, asking if it was permissable to hunt where those signs were.—District Game Protector Samuel C. McFarland, Centreport.

Hunted Hunter

CARBON COUNTY—On the last day of the buck season, December 12, 1953, I was told this rather odd story. As six hunters were in the process of walking along a trail in preparation to taking up positions to start a drive, they were disturbed by a crashing of the brush, and looked up just in time to see a buck deer charging down upon them. There was a hurried scramble to get out of the way, all of them succeeding but one. This buck deer ran directly over this person tearing a hole in his trousers, bruising his left shoulder, breaking his gun stock and bending the receiver on the Savage rifle. One of the party pursued the deer and eventually killed it, a five point buck. The injured member not discouraged, left for home and returned with a shot gun to continue the hunt.—District Game Protector William E. Fulmer, Lehighton.

Cock Bird Likes Convoy Duty

PERRY COUNTY—While working at exhibit at Port Royal Fair a Harry Fairman, Mexico, Pa., who drives a milk truck related the following to me: His milk truck is red, and when he would get near a farm near McAllisterville a male ringneck would meet him along the hard surfaced road and run after his truck until he was near the lane to turn into a farm house. Then Mr Ringneck would cut across a corner and meet the truck at the farmer's milk house and stand and crow until the truck would leave the farm house, then follow the truck along the same route as when it entered. This bird either did not like the color of the truck or was just furnishing it an escort, apparently feeling it did its good turn for the day.—District Game Protector Harold E. Russell, New Bloomfield.





Grid Coach Trains Cottontail

CAMBRIA COUNTY—The football coach at the South Fork High School taught conservation and good sportsmanship right on the football field when a nest of rabbits was found on the field. The coach placed stakes around the nest and mother rabbit came through with her nest unharmed.—District Game Protector L. D. Mostoller, Johnstown.

Calling for Chocolate

MONTGOMERY COUNTY—One evening earlier this month a raccoon entered one of the large suburban department stores. The coon visited many departments but especially liked the candy location and feasted heartily on the chocolates. Then having his fill continued his wanderings and jumped onto a counter knocking the telephone off the cradle. The operator kept asking for "number please" but received no reply except heavy breathing. The operator then called the local police to investigate. They found nothing except the telltale footprints made with chocolate candy. The raccoon was caught two days later in a box trap.—District Game Protector Donald L. Croft, Hatboro.

Who Hoots At Midnight

LANCASTER COUNTY—One superstitious woman wanted the writer to shoot a "hoot" owl on the outskirts of Lancaster this month. She stated that she had heard this owl hoot at midnight the night before and at that precise time one of her best friends died. The complainant was perturbed about who might be next when the owl would hoot again. Significantly enough the complaint was filed the morning after a superstitious story was portrayed on a local TV program.—District Game Protector John M. Haverstick, Lancaster.

Quail Confuses Seasons

CUMBERLAND COUNTY—Mr. Paul R. Teitrick, R. D. 1, Carlisle, Pa., a well known sportsman of the area, called me the morning of September 26, and reported that he had a quail nesting on his property. A visit to the Teitrick farm proved that he was right. Mr. Teitrick showed me a quail at the base of a hollow tree setting on a nest containing 12 eggs. This particular bird is certainly working overtime in trying to do her share in replenishing the quail population This is the latest date I have personally observed this species nesting.—District Game Protector Homer H. Thrush, Boiling Springs.



A Sportsman's Guide to . . .

Elk County

Forty-Fifth In A Series

Land Area

Elk County contains 517,888 acres, of which 458,352 acres are forested. State Game Lands total 65,959.9 acres.

Transportation

Railroad transportation is furnished by the Pennsylvania, the Baltimore of Ohio, the Pittsburgh, Shawmut & Northern, and the Buffalo & Susquehanna lines. The Buffalo-Pittsburgh Highway (U. S. 219) and other routes traverse the county, which has 221 miles of improved State highways.

District Game Protectors

District Game Protector Vern A. Van Order, R. D. #1, Wilcox (Phone: Johnsonburg 2-1024) has jurisdiction over Highland, Jones, and Benzinger townships.

District Game Protector Gerald D. Kirkpatrick, P. O. Box 81, Portland Mills (Phone: Ridgway 2-4859) has jurisdiction over Millstone, Spring Creek, Ridgway, and Horton townships.

District Game Protector L. L. Logan, R. D. #1, St. Marys (Phone 4-2948) has jurisdiction over Fox, Jay and Benezette townships.

Fish Warden

H. Clair Fleeger, R. D. #2, St. Marys.

District Forester

L. G. Barnes, Emporium.

Note: This center sheet can be removed without damaging the magazine by loosening the two center staples.

Agriculture

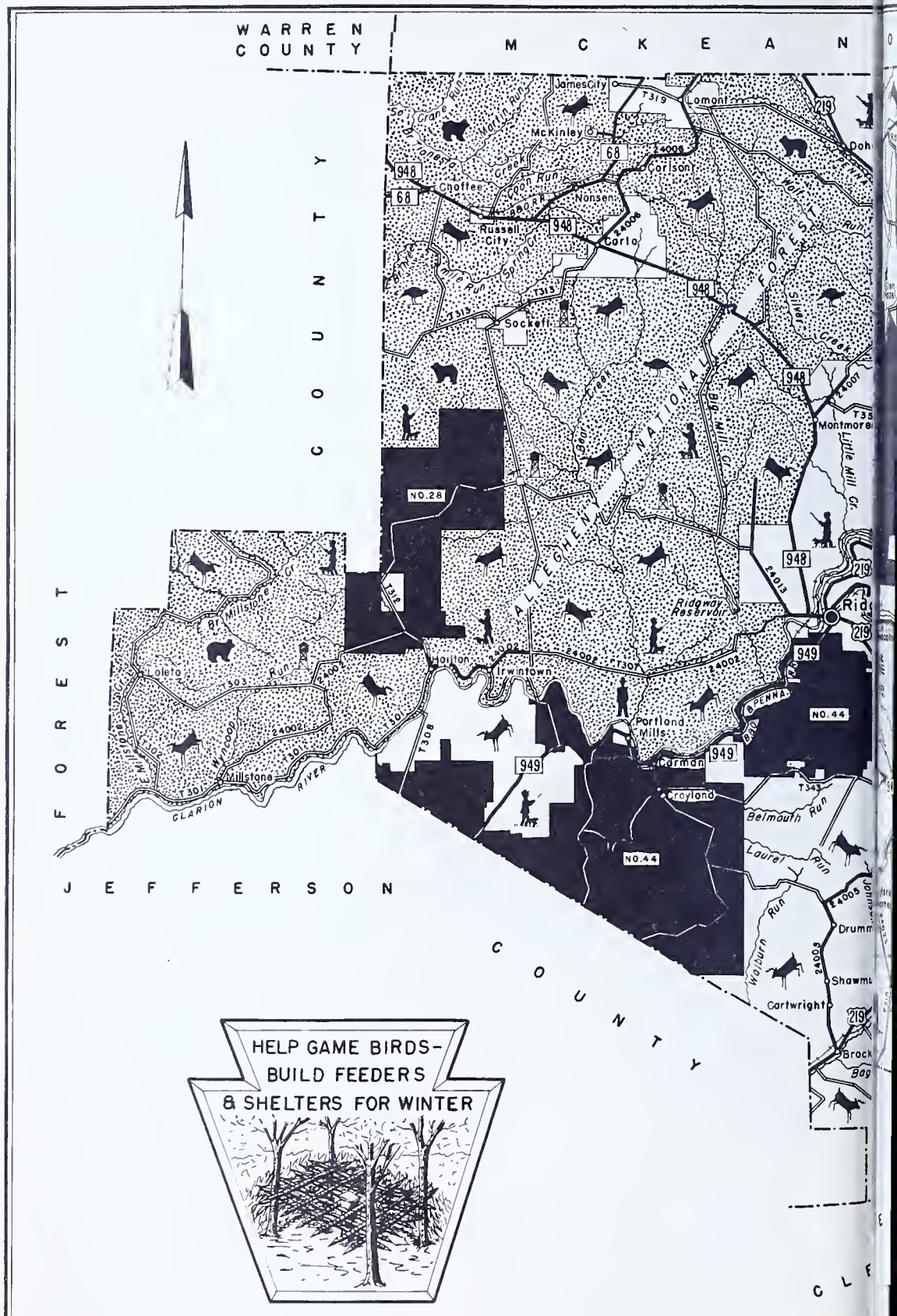
Elk County is largely forested with farming limited. Only 26,940 acres are under cultivation on 843 farms. Principal agricultural products are hay, grains and dairy products.

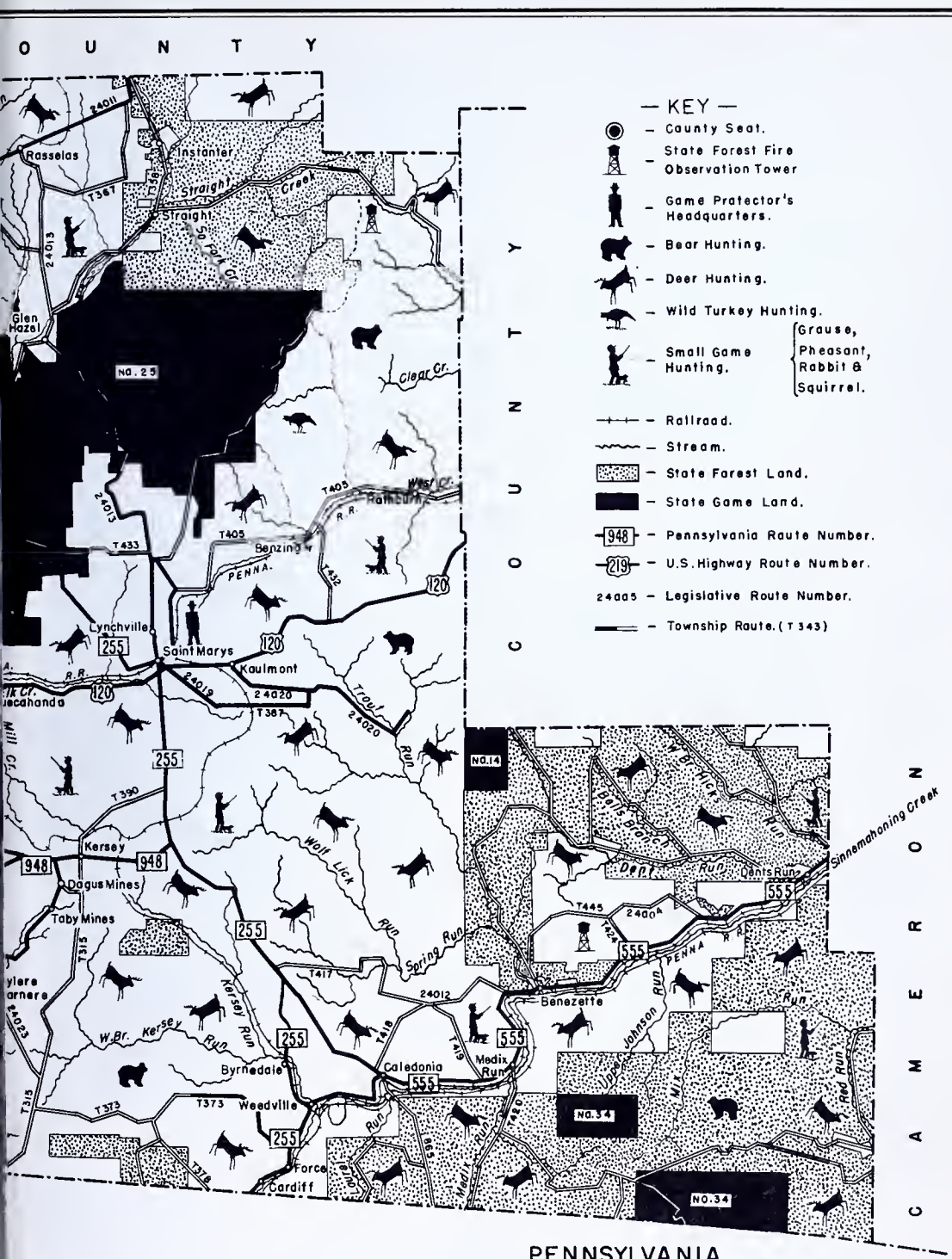
Industry

Lumbering, at one time the major industry, is now limited because of the depletion of the forests. Tanneries were originally established in the county to be near the supply of hemlock and oak bark used in this industry; tanning is still an important source of employment. The principal natural resources are fire clay, bituminous coal, oil and natural gas, and silica sand. The principal classes of industry are metals and metal products, paper and printing industries, leather and rubber goods. The chief products are sole leather, electrical machinery, apparatus and supplies, printing paper, gas and electric fixtures, bituminous coal, terra cotta and fire clay products.

History

Elk County lies northwest of the center of the State, south of McKean County which contributed to its territory when it became a separate county in 1848. Other parts were taken from the adjoining counties of Jefferson and Clearfield. In 1832 Judge Geddes was surveying this region for a proposed canal and noted elk at the head of Bennett's branch, an observation which had a bearing on the naming of the new county a decade later. According to some historians the first settlement in this


WARREN COUNTY
M C K E A N
COUNTY
FOREST
ALLEGHENY NATIONAL FOREST
JEFFERSON
COUNTY
James City
Lomont
McKinley
Corlson
Choffee
Nonsen
Russell City
Corto
Sackett
Montmorenci
Little Mill Cr.
NO. 28
Ridgway Reservoir
Ridgway
Millstone Cr.
Millstone Br.
Toleto
Millstone
Millstone Run
CLARION RIVER
Hoilton
Irwintown
Portland Mills
Carman
Croyland
NO. 44
Belmouth Run
Laurel Run
Walburn Run
Drumm
Shawmut
Cartwright
Brock
Bag
PENNA.
948
949
68
219
T319
T313
T315
T316
T308
T307
T303
T301
T343
24008
24007
24013
24002
24005
24003
HELP GAME BIRDS-
BUILD FEEDERS
& SHELTERS FOR WINTER


— KEY —
County Seat.
State Forest Fire Observation Tower
Game Protector's Headquarters.
Bear Hunting.
Deer Hunting.
Wild Turkey Hunting.
Small Game Hunting. Grouse, Pheasant, Rabbit & Squirrel.
Railroad.
Stream.
State Forest Land.
State Game Land.
948 — Pennsylvania Route Number.
219 — U.S. Highway Route Number.
24045 — Legislative Route Number.
Township Route. (T 343)
Rasselas
Instanter
Straight Creek
Straight Cr.
Glen Hazel
NO. 25
Clear Cr.
Wilcox Cr.
Ralpho
Benzinger
PENNA. R.R.
Lynchville
Saint Marys
Kaulmont
Trout Run
Kersey
Dagus Mines
Toby Mines
Wolf Lick Run
Spring Run
W. Br. Kersey Run
Kersey Run
Byrnedale
Caledonia
Medix Run
Weedville
Force
Cardiff
Benezette
Johnson Run
Upper Johnson Run
Red Run
Sinnemahoning Creek
Dents Run
NO. 14
NO. 34
ELK COUNTY
CAMERON COUNTY
PENNSYLVANIA GAME COMMISSION
ELK COUNTY
PENNSYLVANIA
Scale in miles
L.A.M. '54

area was made by a man named Wade at the mouth of little Toby Creek, in present Ridgway township, in 1798. Enos Gillis was the first settler in Ridgway in 1822. The borough's name honors Jacob Ridgway, wealthy merchant of Philadelphia, who owned more that 40,000 acres of land in the territory. His agents laid out the town in 1833. Johnsonburg, settled in 1810, was first known as Coopersburg and then as Quay, later renamed in honor of pioneer settler David Johnson. Glen Hazel was originally settled by Belgian glass workers and was known as New Flanders. Jones township was the site of an ancient Iroquois Indian village.

Recreation—Fishing

Fishing waters (name of stream or lake, fish stocked by the Pennsylvania Fish Commission, location and length or area stocked) include:

TROUT: Bear Run, Brockport, Rt. 219, 2 mi.; Belmuth Run, Carmen, Rt. 549, 3 mi.; Big Run, Hallton, Rt. 949, 4 mi.; Boggy Run, Brockport, 4 mi.; Byrnes Run, Byrnedale, Rt. 255, 5 mi.; West Clarion Creek, Wilcox, Rt. 219, 5 mi.; E. Br. Clarion River, St. Marys, Rt. 255, 5 mi.; W. Br. Clarion River, Johnsonburg, Rt. 219, 6 mi.; Crooked Creek, St. Marys, 3 mi.; Driftwood Branch, Sterling Run, Rt. 120, 3 mi.; Hicks Run, Driftwood, Rt. 120, 4 mi.; Island Run, Carmen, 4 mi.; Laurel Run, Ridgway, 6 mi.; Maxwell Run, Brockway, Rt. 219, 2 mi,; Medix Run, Weedville, Rt. 255, 8 mi.; Mix Run, Mix Run, Rt. 555, 4 mi.; Paige Run, Driftwood, 3 mi.; Seven Mile Creek, Wilcox, 2 mi.; Spring Run, Benezette, Rt. 555, 5 mi.; Straight Creek, St. Marys, 5 mi.; Trout Run, Benezette, 1 mi.; Vineyard Run, Brockway, 2 mi.; Wolf Lick Run, Kersey, Rt. 948, 4 mi.; Wyncoop Run, Millstone, Rt. 949, 2 mi.

Recreation—Hunting

Elk County provides some of the best deer, bear and wild turkey hunting in the Commonwealth. Other forest game species include squirrels and grouse. Part of Pennsylvania's wild elk herd, fully protected by law, is found in this county. Five large tracts of State Game Lands, open to public hunting are located as follows: Number 34 (in part), containing 3,744.0 acres in the southeastern corner; Number 25, containing 23,-136.3 acres near Johnsonburg; Number 44, containing 29,994.9 acres near Ridgway and Portland Mills; Number 28 (in part), containing 8,172.9 acres near Hallton; and Number 14 (in part), containing 911.8 acres southeast of St. Marys.



New Mink Bait?

WAYNE COUNTY—On September 28, David Hauenstein, Aldenville, Pa., brought the pelt of a large male mink in to me. He related the following story: Mr. Hauenstein is a chicken raiser and farmer At times he has as many as 10,000 chickens which he raises for the market. He said he had been bothered recently by rats in his feed room and set traps for them. He had some success and checked his traps each time he entered the feed room. On the above date, one trap was missing. He later discovered the ring of the trap chain hanging out of a bag partially filled with feed. He pulled the trap out and in the trap was a large male mink. It had burrowed into the sack of feed and had evidently smothered. Being interested in what the mink had been feeding on, he cut it open and the only thing in the stomach was mash which he had been feeding to the chickens. Just a thought, perhaps this would be the bait necessary to make mink trapping a big success. What do you think?—District Game Protector Robert H. Myers, Honesdale.

Dial Clear for Murder

ALLEGHENY COUNTY—The following incident was related to me by Special Fish Warden Melvin Clear. The episode took place in the Shadyside district of the city of Pittsburgh: On Tuesday, September 28, Mr. Clear received a telephone call. Upon answering the phone he heard these words, "Genevieve was killed." Quite shocked and taken aback at hearing these words from a feminine voice, Mr. Clear interrupted, "Please, I believe you have the wrong number." "No, no!" the lady continued, "Genevieve was killed and the babies are starving." "But lady—" The voice interrupted, "She was killed yesterday, someone must do something or the babies will die. Can you do anything to help us?" Mr. Clear, now recovering from the initial impact of the words proceeded to make sense out of confusion. It appeared that Genevieve was a lady squirrel, a pet of the neighborhood and she had been killed the day before by an automobile. Her four babies were located in a nest in a corner under the eaves. He was informed that the whole neighborhood was saddened by the tragedy, but particularly the boarders in the house wherein the nest was located, for they often gave Genevieve tidbits of food such as dry bread, etc. This sad tale was unfolded and could Mr. Clear do anything about it. In true Sir Lancelot fashion, he did come to the rescue; climbed to the nest, secured the babies and they are now doing well on a doll baby bottle. Genevieve's friends can now bear their grief with a little less sadness since a double tragedy has been averted.—District Game Protector C. R. Kinley, New Kensington.



Chimney Sweeps

CUMBERLAND COUNTY—One evening in early September, I was standing in my front yard talking with one of my deputies. Our attention was attracted by a large bird flying overhead and finally landing on a neighbor's chimney. It was too dark to identify the bird so we put a spotlight on it and found it to be

a barn owl. The owl sat on the edge of the chimney for quite some time. Finally it disappeared into the chimney and came up with a chimney swift. The same act was repeated by a second barn owl. I do not know how long into the night this continued.—District Game Protector George D. Bretz, Shippensburg.

Clean Water—Conservation Asset

MONTGOMERY COUNTY—Results certainly are beginning to show on the Schuylkill River here in Montgomery County since they started the huge clean-up project some years ago. The river certainly has changed in the past five years. The Schuylkill is clearing up more every year. It is fast becoming one of the best bass fishing waters in the county. I have checked fishermen this year with some very fine three, four and five pound bass. I also know of two trout that were caught here during the bass season which is a very good indication that the river is clearing up. The ducks and geese certainly are coming back more and more to feed on the river. I have seen personally three different flocks of geese on the river that feed there every morning and evening. These flocks contain about 400 geese. Patrolling the river in a boat it is very common to kick up small groups of ducks all along the river. With the job that has been done and the job that we still must do, it certainly would not take too many years to have the Schuylkill back as a major recreation area for this part of the State.—District Game Protector William E. Shaver, Mainland.

Chicken Thief

SOMERSET COUNTY — During this past month I became engaged in attempting to outsmart a dog which made its living from the fat of the land. This was my first real test, but I did not know what I was after. Two years ago, Roy Brought, a Farm-Game Cooperator, lost a number of chickens to fox. I caught the fox and he had no more trouble until August 29. Mr. Brought called me and said that he had lost chickens again, about 39 in one night. I went to check and it looked like the work of fox, almost identical to the damage done two years previously. I set the traps as before, but did not receive one visit from a fox. I did catch nearly everything else; even Mr. Brought's dog and a couple of his chickens. He continued to lose chickens but no sign of the culprit. Mr. Brought finally saw a dog near the pens and waited for it the next night. At 3:00 a. m. he killed the culprit—a large black shepherd dog—after losing over 100 chickens.—District Game Protector R. V. Rea, Confluence.

Tagged Deer Turn Up Here

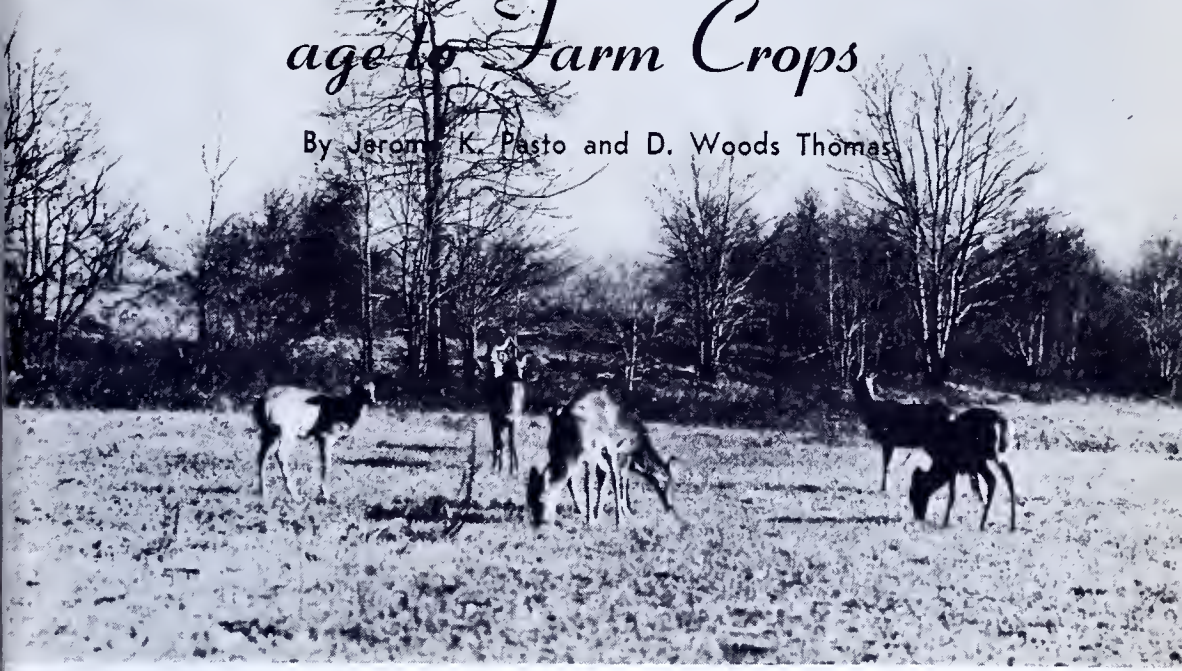
MONROE COUNTY — I have found the second ear-tagged deer killed in this district. Both deer were young does tagged by the New Jersey Conservation Department. The first doe was killed by a car on Route 209 near Bushkill in July 1953. On June 29, 1954, the second deer was found dead of a broken neck in the Delaware River near Shawnee-on-Delaware.—District Game Protector John H. Doebling, East Stroudsburg.

Mowing Aftermath Shows Sportsmanship Pays

CHESTER COUNTY—During June, I received several calls from farmers, stating that during their mowing operations they had killed the mother hen pheasant. They wanted to know if they could obtain permission to pick up the eggs and set them under a hen chicken to see if they could be hatched. It not only displays good sportsmanship on the part of these farmers, but also their willingness to cooperate with conservation authorities and to help us to help them improve their future sport.—District Game Protector Edward J. Fasching, Downingtown,

The Dollar Side of Deer Damage to Farm Crops

By Jerome K. Pasto and D. Woods Thomas



THIS is the third in a series of five articles reporting our research on deer damage to farm crops and income from hunters in Potter and Monroe Counties. In this report we have put dollar signs on the data. We'll show you what this damage means in a financial way to the individual farmers, and to farmers generally in the two counties. After all, it's the dollar side that finally hits the pocketbook—and we figure it's a pretty good way to sum up this crop damage by deer.

While we're reporting the details of dollar damage to crops, don't forget that deer hunting brings in relatively large sums of money to the folks in the two areas. This would be on the plus side. We have some pretty good figures on these amounts too, and we'll present them in the next issue of the GAME NEWS.

How We Figured the Dollars

We calculated the pounds, bushels and tons of the various crops actually lost through deer damage, and then multiplied these figures by their 1951 farm prices. For instance, in 1951 buckwheat was $1.39 per bushel, valued at the farm. If a farmer's total yield of buckwheat was reduced by 50 bushels because of deer damage, then he lost $69.50 ($1.39 x 50). We did the same for every damaged crop on every farm we studied, and then added up the total for these farms, and for the two counties. In addition, we have figured out the dollar value of crops and property that were damaged by the hunters themselves.

The Total Figures on Damage

The farm value of crop losses due to deer in Potter County in 1951 came to $142,344. The details are in Table 1. In addition, deer caused other property losses, amounting to $1,523. The deer hunters themselves damaged property worth $4,411. This makes a total loss to Potter County farmers of $148,278, attributed to deer and deer hunters.

Monroe County farmers incurred a loss of $46,407 from crop damage by deer, a $79 loss due to other inroads by deer, and a loss of $530 in crops and property brought about by deer hunters. All of this totaled $47,016.

Take the figures on crop damage alone. In the two counties these totaled almost $189,000. When harvest time came around, these farmers had this many fewer dollars worth of crops to sell than if there had been no deer around. Fertilizer and planting costs (the biggest part of crop expense) had been sunk into these crops. It takes about the same amount of labor to harvest a damaged crop as it does to harvest an undamaged crop even though the injured crop is low in yield. For example, whether the oat yield is high or low, the combine must still make the same number of trips around the field.

The result of all this is that the $189,000 worth of crops destroyed by deer came very close to a NET loss to the farmers of Potter and Monroe Counties. In other words, the deer herd was responsible for this amount of decrease in the 1951 net income of these farmers. We will point out in our next article that a very small part of this loss was recovered in the form of profits that farmers earned by providing room and board to deer hunters.

The Detailed Figures on Damage

Sixty-two per cent of the farmers in Potter County had some crops ravaged by deer in 1951. For these farmers, the loss averaged $305 per farm. Thirty-six farms with big businesses and located next to deer habitat suffered $800 or more in reductions in crop yields. A few farmers lost up to a fourth of their net income because of deer.

Losses were heavy in the densely wooded southern section of the county—averaging $535 per farm that had damage. In the less heavily wooded northern section the damages averaged $190 per farm. Not all of this difference, however, was due to

This is an oat field almost ready for harvest. Often, deer will graze the same spot in an oat field time and again because tender shoots continue to grow. The plants are finally killed and weeds replace them. Here you can see such an area, with weeds replacing the oats.



Table 1 Rank of Major Crops According to the Total Farm Value of Damage by Deer. Potter and Monroe Counties, Pennsylvania, 1951.

Potter County			*Monroe County*		
Crop	*Dollar value of damages*	*Per cent of total value of crop damages*	*Crop*	*Dollar value of damages*	*Per cent of total value of crop damages*
Oats	$28,293	20	Spinach	$15,373	33
Hay	22,420	16	Snap beans	8,551	18
Snap beans	17,538	12	Corn for grain	5,480	12
Potatoes	15,511	11	Buckwheat	4,277	9
Strawberries	12,720	10	Oats	3,617	8
Buckwheat	11,573	8	Hay	3,257	7
Corn for grain	11,383	8	Wheat	2,392	5
Peas	7,481	5	Barley	1,643	4
Wheat	4,870	3	All other	1,817	4
Pine trees*	4,677	3			
All other	5,878	4			
Total crop damage by deer	142,344	100		$46,407	100
Other damages by deer	1,523	..		79	..
Damage by deer hunters	4,411	..		530	..
Total all damage	$148,278	..		$47,016	..

the amount of deer habitat surrounding the farms. We observed that in the densely wooded area a somewhat larger proportion of the crops that were hit were higher in market value than those in the less heavily wooded area. But a farmer in a wooded area can expect more visits by deer than a farmer in a less heavily wooded area, as we reported in the previous issue of the GAME NEWS.

In Monroe County, 45 per cent of the farmers had crop visitations by deer. These farms averaged a loss of $137 per farm. Here again, farms in the heavily wooded areas suffered more than those in the less heavily wooded areas.

According to our figures, 5,244 acres of crops were damaged in Potter County. On these acres the loss averaged about $27.00 per acre. In Monroe, 1,876 acres were damaged, with an average loss of about $25.00 per acre. If these per-acre figures seem high, remember that they are for the damaged acres only. Even a relatively low-value crop such as mixed hay, with average yield and 1951 farm prices, would be worth about $30 per acre. When higher value crops such as corn, wheat, beans and raspberries are included, the dollar value of losses per acre is bound to be quite high.

Value of Damages to Specific Crops

In the final analysis, the seriousness of crop damage depends on the number of acres damaged, the severity of the damage, and the value of the crop. A farmer is less concerned about destruction to a low-value crop than to a high-value crop. This is because into the high-value crop the farmer puts much time and money

in the form of production expenses. If he doesn't get enough from his crop at least to cover the cash expenses, then the loss in yield really hurts.

In Table 1 we show the total farm value of damages to the various farm crops. Oats heads the list in Potter County, but in Monroe County a "dark-horse" slid into first place. This was spinach, a high-value farm crop that was hard-hit on several farms. Note that crops such as strawberries, corn for grain, peas, and snap beans are pretty high on the lists—crops not normally thought of as being deer feed. On a per-acre basis, these are valuable crops, and any damage adds up to a big total pretty fast.

Crop Damage Compared with Total Value of All Crops

A bench mark of the relative importance of crop damage can be had by comparing the dollar value of the damage with the dollar value of all the crops produced.

The Pennsylvania Crop Reporting Service estimated that in 1951 the total farm value of all field crops in Potter County came to a little over two and a half million dollars. See Table 2. Crop losses because of deer came to about $142,000 or 5.5 per cent of the total value of all field crops produced. In Monroe County crop damage by deer amounted to about 3 per cent of the value of all crops.

If it could be said that *every* farmer suffered some damage, and this not over 3 to 6 per cent of the total value of all his crops, then deer damage would not appear too serious. But this is not the case. In the two counties about *half* of the farmers are burdened with *all* of the damage—and to them the loss was of considerable importance.

Deer Damage to Other Farm Property

Deer damage to farm property other than crops was mostly in the form of fences which were knocked down. A few farmers reported that their farm auto or truck was banged up in collisions with deer. Thirteen per cent of the farmers in Potter County and three per cent in Monroe County reported these two kinds of damage. When it came to fences, farmers told us that deer were especially hard on single-wire, electric fences. These fences were knocked down frequently during the summer months. The cost of fixing these fences was not high, but frequent break-down and repair was a thorn in the side of many busy farmers. In all of Potter County, this kind of damage to farm property amounted to about $1500 in 1951 and in Monroe County it came to about $80. See Table 1.

Compared to crop losses, it can be said that deer damage to other farm property was relatively unimportant. The latter kind of damage was suffered by only a few farmers, and their individual losses were small. The nuisance aspect of this damage, if it could have been measured, prob-

Table 2. Comparison of Total Farm Value of Crop Damages by Deer with the Total Farm Value of All Field Crops. Potter and Monroe Counties, Pennsylvania, 1951.

County	*Total farm value of all field crops*	*Total farm value of crop damages by deer*	*Value of crop damages as a per cent of total value of all field crops*
Potter	$2,581,050	$142,344	5.5
Monroe	1,529,910	46,407	3.0

ably would have exceeded the small cash losses.

Deer Hunter Damages to Farm Property

Most deer hunters are true sportsmen. They are responsible citizens and respect the rights and property of other people. But among the thousands of deer hunters there are a few bad eggs—just as there are bad eggs in any large group of people, no matter how well they are chosen. Unfortunately, the actions of these unthinking few tend to be remembered, while the good behavior of thousands is forgotten.

In 1951 in Potter County, about one-fifth of the farmers reported damage to farm property for which deer hunters were directly responsible. In Monroe County about 6 out of every 50 farmers reported the same thing. These farmers said that deer hunters damaged fences, farm equipment, crops, livestock, and buildings. Most of the damage was to fences. Farmers reported that fences had been cut, tramped down, or the wires pulled from the posts. Rail or board fences also were knocked down, and sometimes they were used for bonfires. One farmer had observed several times in the past that straw in a storage shed in a back field had been used for fires. During the 1951 deer season, the shed burned to the ground. He wasn't sure, but he thought hunters had built a fire to warm themselves and then left the fire unattended, or let it get out of hand. Farm machinery, and in one case a farm animal, were used as targets by a few hunters who apparently were sharpening their shooting-eye.



Winter wheat is planted in the fall and deer will graze on it through the cold winter months. The plant on the extreme right has not been damaged, the next two nibbled slightly. The two plants on far left have been severely grazed by deer.

Hunter damage to farm property amounted to about $4400 in Potter County and $530 in Monroe County. These totals are very small compared to deer inroads on crops. But hunter damage is irritating to the farmers all out of proportion to its amount. This is because farmers realize that such havoc is done not by deer but by people who should know better. It is the kind of thing that could be eliminated.

Table 3. Proportion of Farmers Who Killed Deer for Crop Damage and Home Consumption. Potter and Monroe Counties, Pennsylvania, 1951.

Reason for killing deer	*Farmers who killed deer in Potter County*		*Farmers who killed deer in Monroe County*	
	Number	*Per cent of all farmers*	*Number*	*Per cent of all farmers*
Crop damage alone	197	26	13	4
Home use alone	288	38	49	16
Both crop and home use	387	52	62	20



Deer like tender new seedlings of alfalfa and clover. The three plants on the left are alfalfa. Tops have been nipped from two. On the right are three stalks of clover. The plant on the extreme right has not been damaged but the other two have had their tops clipped.

Non-Monetary Damages

The story on the damage side of deer and deer hunters would be incomplete if we didn't mention a few of the discourtesies of hunters that were reported to us by the farmers. (In the first story of this series we discussed some of the farmer discourtesies to deer hunters.)

Quite a few farmers told us that some deer hunters parked their autos so that they blocked driveways and farmsteads, drove their cars through fields, left farm gates open, and shot near buildings and from highways. Several farmers mentioned that very few hunters requested permission to hunt on their land. To the hunter this courtesy of requesting permission may seem unnecessary, and perhaps impractical because it is hard to tell who owns what land. But one farmer put it to us this way. He said that when a car pulls up to a farmstead and a bunch of hunters empty out in the fields without even asking for permission to park, then he gets the bad impression that "they think they own the place." While we were unable to put any dollar figure on this kind of "damage," it is quite an important item in the eyes of many farmers. A little attention to this seemingly minor detail probably would go a long way toward improving hunter-farmer relations.

Deer Killed for Crop Damage and Home Use

Farmers have a legal gimmick to retaliate against deer that feed on their crops to excess. They are permitted by law to kill them, provided they notify local game authorities. Also, with permission, farmers are allowed to kill deer for home consump-

tion. They cannot, however, kill a second deer for home use until the entire carcass of the first one is consumed.

We decided to ask the farmers how many deer they killed for these purposes. We were rather surprised with the frankness of their answers. Consequently we figure our information on this subject is pretty good.

In 1951, 197 Potter County farmers killed deer because they were foraging on crops. This was a little over a quarter of the farmers. About 38 per cent of them killed deer for home consumption alone. See Table 3. About half of the farmers killed deer for both crop damage and home use.

In Monroe County the figures were somewhat lower. Only a fifth of the farmers killed deer for crop damage and for home use. One farmer, however, had so much damage to his truck crops in 1951 that he killed 70 deer, all legally. But the relatively few deer killed in Monroe County for crop damage would be expected, since all of our data so far indicates that deer are more numerous and do more damage in Potter than in Monroe County.

Number of Deer Killed

Potter County farmers killed 767 deer in 1951 for crop damage and home use. Take a look at Table 4. This averaged about two deer per farmer for the 387 farmers who put an end to some deer. Of the 767 deer killed, 443 were shot for taking over crops, and the rest were for home use. The farmers who killed deer for home use alone averaged about one deer per farmer. Several farmers reported to us that "deer meat goes a long ways," and that one deer a year is about all they want to eat.

Monroe County farmers killed 221 deer for crop damage and home use, or an average of about two and a half deer per farmer involved. Quite different from the case in Potter County, Monroe County farmers who killed deer for crop damage alone averaged almost 8 per farmer during 1951. Part of this high rate of kill per farmer in Monroe County we attribute to the fact that several farmers there grew high-value vegetable crops that are expensive to grow, and they were out to protect their investment.

Next

In the following issue of the GAME NEWS we will report some more of our research findings. This will be on the income side of deer hunting. In other words—how much money do deer hunters spend in these two counties, what do they spend it for, and who gets it? Furthermore, what does all this mean to the economy and welfare of the local people? We'll try to have answers on this in the next issue.

Table 4. Total Deer Killed, and Number Killed Per Farmer Who Shot Deer for Crop Damage and Home Consumption. Potter and Monroe Counties, Pennsylvania, 1951.

Reason for killing deer	*Deer killed in Potter County*		*Deer killed in Monroe County*	
	Total number	*Per farmer who killed deer*	*Total number*	*Per farmer who killed deer*
Crop damage alone	443	2.2	166	7.6
Home use alone	324	1.1	55	1.1
Both crop damage and home use ..	767	2.0	221	2.4



OUTDOOR FUN WITH A FUTURE



Wildlife in Winter

OF THE four seasons of the year, winter is probably the best time to find out what animals live in your area, and at the same time to find out something of how they live. In the lives of wild animals, winter is a difficult time, but that's the very reason why it's easier for you to get better acquainted with them.

During the winter animals spend most of their time doing two things: finding food and finding shelter from weather and their enemies. Since leaves have fallen from the deciduous trees in winter, the woods are more open and it is easier to see animals. It's easier to find the food patches where they come to eat, and easier to find tracks in the snow or in mud along the waterways.

The first thing to find out about animals is how and where they spend the winter. You'll soon find that they do it in a variety of ways, depending upon the species of animal and the severity of the weather.

Probably the most interesting way that some animals spend the cold months is hibernation. Some mammals, such as woodchucks, chipmunks and ground squirrels, spend the winter in a deep sleep in their dens. During this sleep their heart beats very slowly and all life functions are slowed down. They live on fat stored up during the summer.

Other animals, such as gray and red squirrels, store nuts and other seeds during the late summer and fall near a den site and spend the winter in the den for shelter and traveling to and from their food supply. Beavers store food in the form of aspen and willow shoots and poles in the water near their dams or houses. During the winter freeze up they can get the bark from these shoots for food.

Deer seek out a sheltered spot, if the snow is heavy, and live together in herds in "deer yards." They eat browse (buds, twigs and bark) in and around the yard. If the snow is not heavy, they wander around in search of food.

Smaller animals such as rabbits and even mice find a sheltered spot and feed nearby. Mice feed on weeds, seeds and bark. Rabbits feed on bark, buds, shoots and grasses.

Birds in the area will be in one of two general groups. Birds such as crows, grouse, quail, pheasants, jays and a few others may be permanent residents. They live there all year round nesting in the spring and spending the winter there also. Their winters are spent searching for suitable food during the day and finding adequate shelter at night.

Other birds spent the summer far-

ther north, and with coming of fall migrated to your area—which is warmer—for the winter. Waterfowl, grosbeaks, some of the sparrows and woodpeckers are birds that nest in the north and fly south to winter in Pennsylvania, where the winter food is easier to get. Some of the hawks and owls are in this category also.

Find an area about five feet in diameter on the edge of the garden or any other place where you can dig up the earth. Then, using a shovel or fork, turn over the soil and remove any lumps, stones or pebbles. Rake it over so it is smooth, and soft.

The next step is to place food of one kind or another in the center of the area. Bird seed, suet, peanuts, bread crumbs and nut meats will attract birds and squirrels. As the animals come to feed they will leave tracks in the softened earth, and by watching them, and then studying their tracks you will recognize them the next time you see them.

One of the first things you will notice is that some bird tracks are side by side, and others one in front of the other. Birds such as sparrows usually live in trees or shrubs and hop when they are on the ground. Their foot prints will be side by side. But other birds like pheasants live on the ground and walk rather than hop. Their feet, generally, are like yours in pattern—one is in front of the other. Other birds live in trees and on the ground, and they both walk and hop.

Along the edges of streams or ponds you may find the large tracks of herons or the smaller tracks of killdeer. Crows will also walk along the edge of waterways in search of food.

An excellent place to look for tracks is along the edges of open fields, where the field borders a woods, and where there are many weeds with seed heads that provide food for birds. If there is snow on the ground, you should find an abundance of tracks.

Quail, pheasants, tree sparrows, goldfinches, song sparrows, and other seed eaters will reveal their presence by tracks in the snow. You may even find mouse tracks in such places, since mice too live on seeds in the winter. And where these birds and rodents come to feed, you may find the tracks of larger animals that prey on the smaller. Look for fox tracks, cat tracks or even the "wing tracks" of hawks or owls. These larger birds will sometimes swoop downs to catch a mouse or song bird, and in swooping low over the snow hit it with their wings and leave an unmistakable print in the soft snow.

If you find a patch of sumac, willows, or wild apple trees, look closely for rabbit tracks. Rabbits feed on the bark of these plants in winter, and frequently girdle small trees or shrubs up as high as they can stand on their hind legs.

If you know of a stand of spruces or pines that have produced a large number of cones, visit the stand in very cold weather. Look around on the ground for "leaves" of the cones, showing that something has been tearing them apart to get at the seeds. It may be a red squirrel, or it may be such





interesting little winter birds as pine siskins or crossbills. These northern birds come south at regular intervals, and are usually found feeding on cones.

Hikes along streams or ponds in winter may result in your finding tracks of other animals that you did know were living in your area. You may find tracks where deer have come to drink, where foxes have walked along the water's edge, where mink or muskrats have come up out of the water, where beavers have climbed out of the pond to search for more food or where skunks or raccoons have wandered by.

Each animal leaves a track that is as distinctive as your finger print—and just as the F.B.I. or your state police can identify you by fingerprints, you can identify animals by their tracks. Just as the F.B.I. or a police detective can reconstruct a crime by carefully observing the evidence at hand, and by making carefull deductions based on that evidence, you can figure what animals were doing by looking at their tracks and other signs. By practicing tracking during the winter, when tracks are easy to find, you will be gaining knowledge and skill that will help you as a hunter, trapper or guide later on.

There are other things to look for too, besides tracks. First look for signs of feeding. Owl pellets are one sign. Torn apart cones are another. But look also for shells and pieces of acorns, hickory nuts, beechnuts, walnuts and other nuts and fruits. Squirrels will frequently sit on a stump or large rock to feed and leave unmistakable evidence of what they have eaten. Look for chewed off aspen stubs which show that beavers are nearby; or girdled spruces or pines that show that porcupines are around. You may find dead rabbits or bits of fur and feathers, indicating that mink or weasels live nearby and are killing the animals for food.

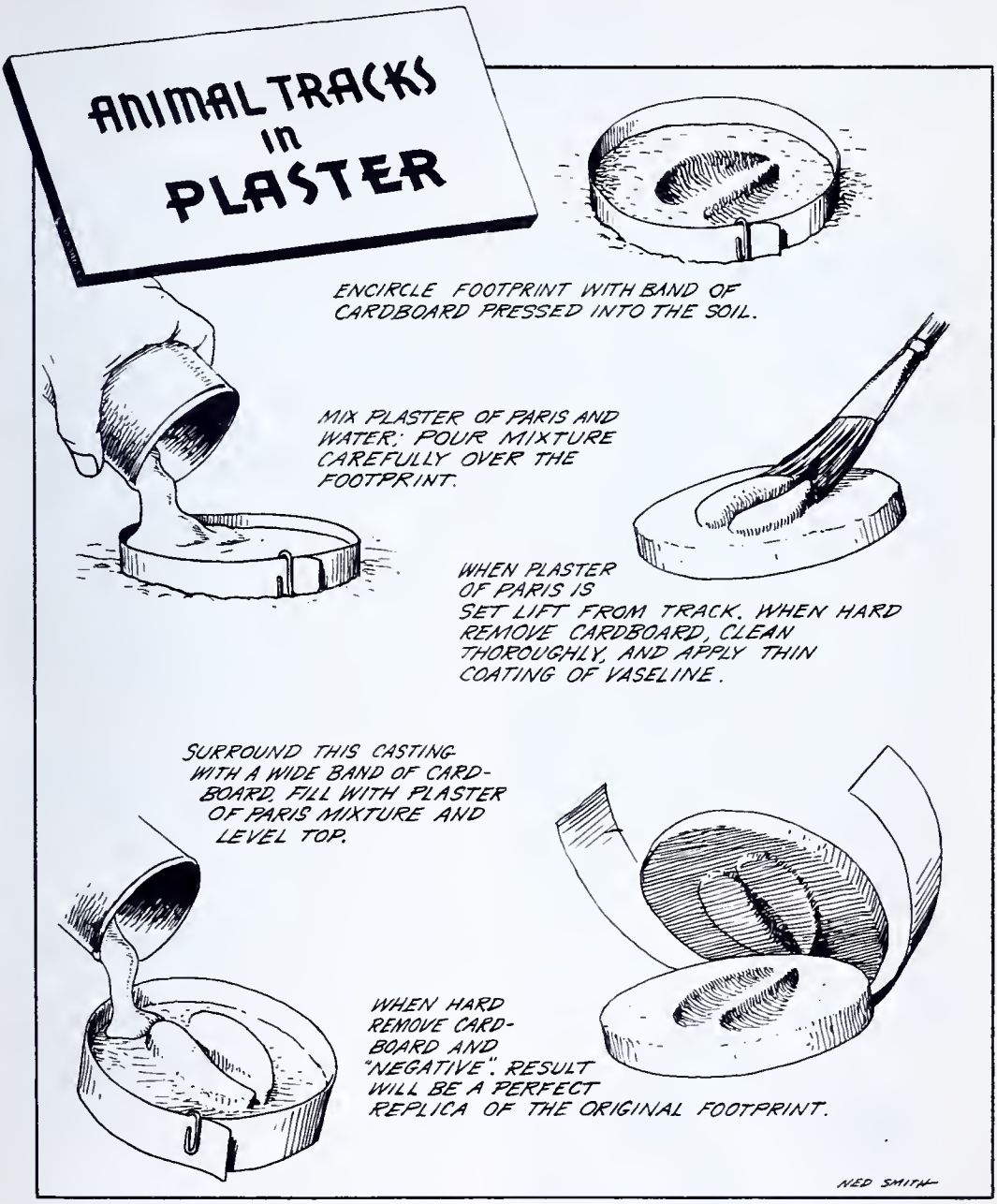
Plaster Casts of Tracks

One interesting project in winter that will help you learn tracks so that you can identify them the next time you see them is making plaster casts. It's rather easy and you can start in your yard with birds, squirrels, cats, dogs and rabbits, and then progress to wilder areas, and get casts of tracks of wilder and less common animals.

Once you find a good track—one that is clear and sharp in mud, dirt, sand or hard packed snow, you are ready to start.

Use a long strip of cardboard—2" wide and 20" or more long. Form it into a circle slightly larger than the track, and fasten it with paper clips. Place the circular cardboard form around the track so that the cardboard extends down into the mud or dirt for half an inch.

In an old coffee can or other medium large tin can, mix some plaster of Paris and water until the mixture is smooth and about the consistency of melted ice cream. Carefully pour the plaster into the mold until it is an inch or so deep. If the track is a very good one, place some small sticks, nails, or wire in the plaster to reinforce the cast. Be sure the plaster



has started to set, though, or the nails will sink and spoil the cast.

When the cast is very hard (in fifteen or twenty minutes), remove it and take off the cardboard form. Carefully brush the dirt from the plaster. This is a "negative" cast.

To make the "positive" cast—the one that looks like the actual print in the ground, first cover the negative cast with vaseline, oil or thin layer of grease. Then, using cardboard, make a form around the negative cast so that the cardboard is two inches higher than the cast. Fasten the cardboard with paper clips or pins.

Mix some more plaster and pour it into the form, over the print of the animal. When the plaster is hard, remove the cardboard and carefully

separate the two casts. The new one is the "positive."

To make the positive look more like an actual track in dirt, paint it with a coat of thin shellac, and while the shellac is sticky, sprinkle on some sand or dirt. Brush off the dirt that does not stick to the shellac.

Finding out about animals in winter is very helpful in wildlife conservation and will give you clues to why some animals are more abundant than others at different seasons of the year. Winter observation also gives clues to certain conservation practices that will improve the natural environment for wildlife, and thus within certain limits, increase the numbers of game animals. More animals means better hunting.

Winter time is the most difficult time of year for wildlife. During the winter animals need plenty of food so they can maintain body heat that keeps them warm in cold weather. They also need shelter from the cold winds, ice and snow. How much winter food there is for deer, squirrels, rabbits, pheasants and quail to eat will determine how many animals survive the winter to raise young the next spring—young that will be your source of sport in next fall or the fall afterwards.



If there is not enough food for what animals are there now, putting out more animals will not help much, or protecting the animals with shorter seasons or smaller bag limits will not help them find food. But if there is adequate food and shelter in the right proportion and close together, then the animals will survive, and will reproduce naturally to fill the natural habitat to the number of animals that the habitat can support.

Your observations of animals and their habits, what they eat, where they feed and where they seek shelter will show what conservation practices are necessary to improve the habitat. It may be providing more natural food or shelter or both.

Watching wildlife in winter can be fun. It can also help you become a better outdoorsman and sportsman. Most important, it can help you improve your outdoor sport.

Two books that will help you identify tracks are: "Animal Tracks," by George Mason, published by William Morrow and Company, New York, 1943. "Tracks and Trailcraft," by Ellsworth Jaeger, published by MacMillan Company, New York, 1948. Look for them in your library.

It takes 3,000 cocoons to make a pound of raw silk. The worm which spins each cocoon eats fifty times its own weight in mulberry leaves.

• • •

There has never been a buffalo in North America . . . except in zoos. Our so-called buffalo is a bison.

• • •

Penguins, which behave so much like people, are biologically a very primitive form of bird.



Mink Season Opens

The pent up enthusiasm of a large number of Pennsylvania hunters was released with the opening of the small game season on October 30th. But a few days later, November 5th, a smaller but equally avid number of outdoorsmen shouldered pack baskets and quietly went about setting mink traps at 7 a.m. That was the opening hour of the current mink season, which ends at noon, January 1, 1955. There is no limit on the number to be taken in one day or over the season.

High water in many of the streams of the Commonwealth may pose a problem to the novice. But the expert mink trapper knows how to meet unusual conditions and score well against this highly prized furbearer, which is considered more cunning and elusive than the fox.

Attached to all traps must be a metal tag on which the name and address of the owner is given.

First Archery Accident Reported

It had to happen some time. On October 15 the first report of a casualty caused by a bow and arrow hunter was received in the Harrisburg Office of the Game Commission.

A 31-year-old Brookville man with 18 years of hunting experience injured himself with an arrow while hunting deer in a forested part of his home county of Jefferson on October 11. That was the first day of the 1954 special bowmen's season for deer.

In the man's own words: "I was climbing over a brush pile when I tripped and the arrow that I was carrying in my bow was driven into the calf of my leg."

In Memorium



Carl B. Benson

District Game Protector Carl B. Benson died at his home in Tionesta on October 23rd. He was 63. Known to his many friends as "Swede" Benson, the veteran officer was held in high esteem in his locality and his chosen fraternal organizations. He had served the Game Commission and the sportsmen of Pennsylvania since his initial appointment as game protector on December 8, 1919. At the time of his death, he held the oldest active field service record in the Game Commission. Carl Benson was not only very popular among his Commission associates but he was equally respected and admired by many sportsmen who knew "Swede" in his Forest County district. Conservation has lost a loyal, able and experienced worker.

COMMISSION PLANS FOR FUTURE

With the certain great increase in the human population in Pennsylvania during the next twenty years and subsequent industrial growth and more intensive agriculture, it is imperative that additional game lands be acquired for recreational hunting for the coming generation.

The Pennsylvania Game Commission at its regular Commission meeting held September 20-30, 1954, formulated the following policy concerning the expenditure of the monies received and those to be received in the foreseeable future from gas royalties. These funds are now earmarked for capital investments covering the purchase of game lands and for the acquisition of Division Headquarters and other necessary buildings.

Game Protector or Turkey Fame Retires

The excellence of Pennsylvania's corps of game protectors is credited to the careful selection and extensive training of her wildlife officers.

But there is no substitute for experience like that gained by Game Commission field men who made practical application of their knowledge before schooling was required and before the widespread use of the present-day conservation tools. One such man is a veteran wildlife officer named Orrie E. Smith, of R. D., Amaranth, Bedford County. He became a State Game Protector in October, 1927, and retired from service on October 1, of this year. His departure recalls that, along with an excellent record, he was one of the men who conceived the wild turkey enclosure plan at the beginning of Pennsylvania's great turkey program.

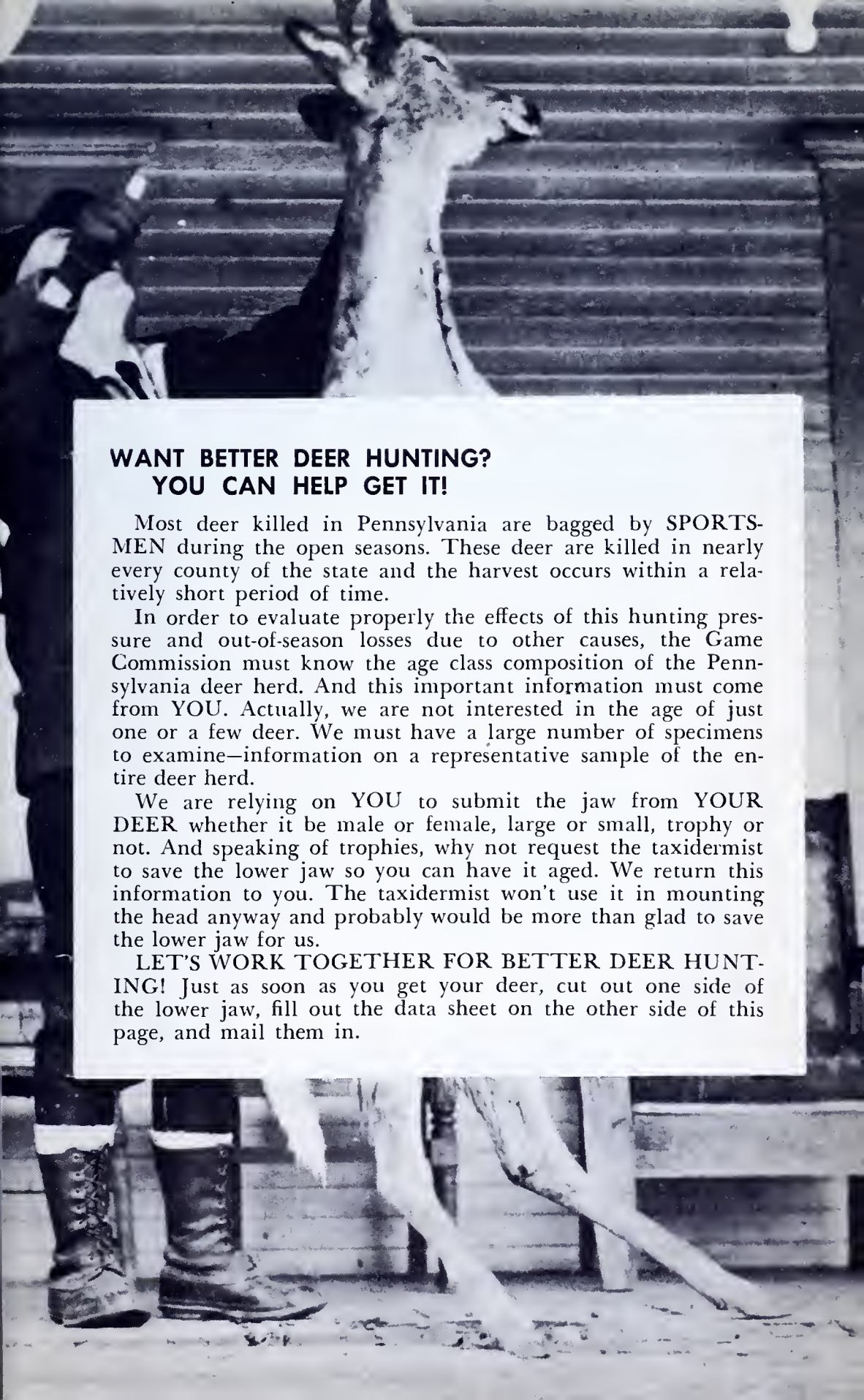
The retiring game protector was feted by officials and brother officers of his organization and the Fish Commission recently. On that occasion Dr. Logan J. Bennett, Executive Director of the Game Commission, presented Smith with a gift from his associates. In doing so, Dr. Bennett emphasized that while the training of new officers and the use of modern equipment and techniques are necessary in wildlife management, still the vision, initiative and down-to-earth know-how of men like the honored recipient will always be necessary to progress.

Farm-Game Cooperator Wins Prize for Soil Conservation

Recently a judging team, made up of representatives of state conservation agencies, picked first and second place winners in Pennsylvania soil conservation districts served by the Baltimore and Ohio Railroad Company. First prize was awarded to Lawrence Harteis, Ebensburg, in the Cambria County Soil Conservation District.

Mr. Harteis' achievement holds special interest for the Game Commission because he became a cooperator on a Farm-Game Project in April, 1953. Since then the Commission has lent assistance to Mr. Harteis by cutting approximately 1,000 lineal feet of woodland border, planting 2,000 evergreen seedlings on steep hillsides and establishing a shrub wildlife border. In addition, this cooperator was supplied thousands of evergreen seedlings which he planted himself.

These soil conservation measures undoubtedly accrued to the benefit of Mr. Harteis in the final judging of his farm. Important in the eyes of the game authorities is the fact they will benefit wildlife also in the years ahead.



WANT BETTER DEER HUNTING? YOU CAN HELP GET IT!

Most deer killed in Pennsylvania are bagged by SPORTSMEN during the open seasons. These deer are killed in nearly every county of the state and the harvest occurs within a relatively short period of time.

In order to evaluate properly the effects of this hunting pressure and out-of-season losses due to other causes, the Game Commission must know the age class composition of the Pennsylvania deer herd. And this important information must come from YOU. Actually, we are not interested in the age of just one or a few deer. We must have a large number of specimens to examine—information on a representative sample of the entire deer herd.

We are relying on YOU to submit the jaw from YOUR DEER whether it be male or female, large or small, trophy or not. And speaking of trophies, why not request the taxidermist to save the lower jaw so you can have it aged. We return this information to you. The taxidermist won't use it in mounting the head anyway and probably would be more than glad to save the lower jaw for us.

LET'S WORK TOGETHER FOR BETTER DEER HUNTING! Just as soon as you get your deer, cut out one side of the lower jaw, fill out the data sheet on the other side of this page, and mail them in.

DEER DATA SHEET

lled: County_____ Date_____

Township_____

x: Male ___ No. of points: Right _____ Left _____

Diameter (1" above burr) _____inche

Female ___ Pregnant: Yes _____ No _____

Lactating: Yes _____ No _____

ight (actual weight preferred):

Hog-dressed, estimated _____lbs

Hog-dressed, actual _____lbs

marks: (shed antlers, deformities or disease, unusual condition,

general remarks, etc.)_____

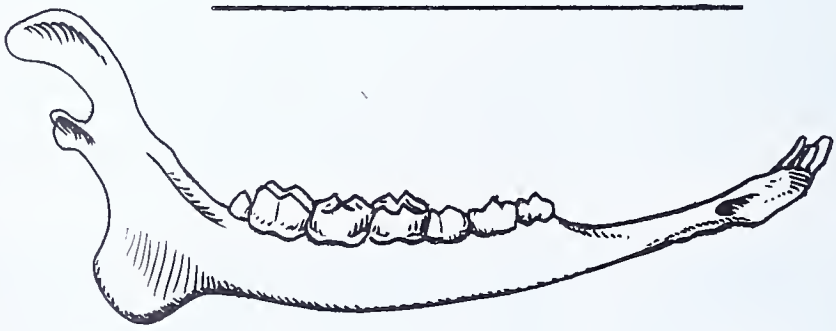
_____

_____

Return Address: _____

_____

_____



ll out this form as completely and accurately as possible and forward

th one side of the lower jaw of your deer to: Stanley E. Forbes,

2 Lookout Avenue, Ridgway, Pennsylvania.



PGC Photo by Parlaman

At the height of the trapping season, this scene of a Pennsylvania fur house is duplicated in many places all over the state.

Trapping Has Changed

By L. J. Kopp

PRINCIPLE is about the only thing in trapping today which has not changed to any great extent. But like most other modern industries, the manner in which it is done has changed.

For example, farming in the United States began when the early settlers hacked a small patch out of the woods and planted a few rows of corn. Look at the highly mechanized farm of today. It has been changed, though the principle remains the same.

Trapping and the fur industry began when the first white man came to this land and found no other occupation available. Today it has developed into something which is more conducive to modern times. However there are still those who refuse to believe it. Then too there are many who have no way of knowing the difference.



We know that agriculture followed close on the heels of trapping. Earlier, the pioneer trappers had led the way for these settlers to develop farming. As farming advanced, trapping gave way to another occupation, and the vast area of unexplored land was reduced. At the same time, while more and more land was claimed and developed by these early settlers, the number of trappers was increased. It will be noted that as tillable farm land was developed, the fur animals and other wildlife began increasing.

Today we have about two million

trappers throughout the United States, together with more fur than ever before in our history. Trapping has changed from an occupation limited to a few pioneers, to a pursuit engaged in by two million people. There are still men in America who consider trapping as their occupation. Others run a trapline as a part time job. Many thousands more trap for the sport.

As methods of transportation advanced with the demands of civilization, the trappers methods too advanced, almost unnoticed. The early trappers operated their trapline mostly on foot, and naturally they traveled light, living off the land. Some trappers traveled on snow shoes which were made of raw hide by the trapper himsef. Still others traveled by birch bark canoe, while some traveled on horse back.

Today many trappers still travel on foot, but only on short traplines in populated areas. In the wilderness areas which we still have, the trapper has a string of temporary cabins or shelters, and he still travels on foot, and on snow shoes. The horse and the canoe are still widely used by trappers as well. However today the majority of trappers speed along on our many miles of improved highways in an automobile, operating their trapline. Some of our trappers today use bicycles and motorcycles. Even skiis are used to advantage by some high mountain trappers. It may surprise many to learn that the trapper today has gone so far as to utilize an airplane to look over trapping territory.

These modern methods of transportation make it possible for comparatively more people to operate a trapline. As such competition enters the scene, the dramatic adventure of wilderness trapping is taken out. However, the glamour and thrill of following the trapline in search of wild fur is still the same as it was

Modern day fur coats often start with school-boy trappers like the one shown here. Proper pelt preparation is just as important now as it was in the days of Daniel Boone.

PGC Photo by Parlaman



when Daniel Boone and Kit Carson were alive.

In Pennsylvania, for example, we have many thousands of trappers scattered over the entire state. Comparatively few trappers engage in trapping as an occupation. In view of the importance of fur resources within our State, we have laws which govern the taking of fur animals. Under these laws, any citizen of Pennsylvania may have the pleasure of trapping. And so we find competition on the trapline. Trapping has changed.

Today a trapper can set out a group of traps on his farm, or a trapper can set out a line of traps over the weekend. Or he can operate a long line of traps by automobile. At the same time a trapper can also operate a trapline on foot, as long or as short as he wishes. A trapper can even operate a trapline while going to and from his regular job or place of employment.

Much of this increase of trappers came about by the development of simplified methods of trapping. The long hours of toil in making dead falls and pit falls gave way to the steel trap back in 1854.

Although the steel trap was invented by Sewell Newhouse as early as 1823, it was not manufactured on a large scale for wider use until about 30 years later. At that time a steel trap was only that. There was only one size. Today millions of steel traps are being manufactured to keep up with the demand. Not only one size, but different, and special sized traps for each kind of fur animal.

As the population increased in this land of ours, the demand for more furs increased along with it. The few scattered pioneer trading posts gave way to many local fur buyers who collect the furs caught by trappers in their area. From there they are sent to fur buying establishments in the larger cities. The chain continues on to the fur manufacturer who manufactures the fur garments. Finally we reach the fur retailer who sells the finished product to the man on the street.

This long chain of events involves a huge portion of our National economy. The raw fur crop alone is estimated at about $125,000,000 each year. It means good jobs for millions of people.

Upstream Conservation Measures Do Pay Off

Proof that an upstream conservation program can do much to avert flood catastrophes was demonstrated recently. In early May, the cloudburst that struck the top part of Oklahoma's Washit valley presented a flood potential unequalled since 1934. The rainfall that year, 14 inches in a single day, is classed as being of the "100-year variety," according to the Wildlife Management Institute.

At Cheyenne, Oklahoma, L. L. Males, former president of the Oklahoma Bankers association and ardent soil conservation leader, said that the drainages in which soil conservation practices had been followed "performed 100 per cent." "It worked wonderfully," Males said. "If it had not been for the Sandstone, Kiowa Creek, and Beaver Dam Creek program, the flood downsteam toward clinton probably would have been worse than the disastrous flood of 1934, because the storm covered twice as much territory as that of 1934."



How Good Is the 257

By Ed Shearer

THE most "danged if you do and be hanged if you don't" question that sends a gun editor swinging it, "What is the best all-round rifle for the East?" As 98 per cent of the hunters will never point a rifle at anything larger than a deer, a black bear or maybe a moose on a rare occasion, we can take it from there. In reading dozens of articles over the years on all-round rifles, it seems to me the writers have always left the most important ingredient out. That is, it takes an experienced shot back of the rifle or it's a total bust as an all-rounder. In the very nature of things it's bound to be a mite heavy on the smallest and a bit light on the largest game.



So the hunter must have a working knowledge of the habits, size and anatomy of the various kinds of game he intends to shoot with this rifle. Also he must have some understanding of the effects of different types, weights and shapes of bullets at varying velocities on the same game. If a hunter does not have this "Savvy," or is not willing to put some study on it before employing the rifle in the field, there is going to be a lot of wasted game and disillusioned users of the supposed all-rounder.

Another point to keep in mind is while loading companies sell varmint loads for 25, 27 and 30 calibers, thus implying these loads make them all-

rounders—be not deceived. Suppose you want to shoot a turkey or a small animal whose pelt you desire with one of these loads. In the first case your wife will speedily enlighten you on its short-comings and in the second your pelt will have practically disappeared. Also remember that to know a rifle and hit definite spots on various size game takes a lot of shooting with that particular "Betsy." With factory ammo this can easily cost more than keeping the family car going.

So two things are clear. The all-rounder from an Eastern viewpoint must have a variety of bullet types and weights available for it to do a fair job on everything from a stray mouse to an occasional moose—with a whale of a lot of other stuff in between. Second—it should afford a lot of shooting without sending junior to school wearing holes in his shoes.

The 25 caliber was the popular Eastern choice for many years as an all purpose rifle. In recent years the 22 caliber hotshots have been crowding them out of the varmint field. The old favorites, 25/20-25/36—25/35, have departed from the scene. Even the great little 250 Savage is steadily losing out to a comparative Johnny-come-lately, the 257 Roberts. This cartridge, while the last commercial 25 caliber to make its appearance, was a long time cooking. Some of it originated in the experiments of Dr. Mann. Part of it was further developed by Adolph Niedner. But it was Major Ned Roberts and his associates who perfected it to the point that the commercial arms companies put it on the market.

The cartridge as marketed today is practically the 7-mm necked down to 25 caliber. The shoulder slope has an angle of 20 degrees and 45 minutes, the same as the 7-mm and some sharper than the 30-06 which runs 17 degrees and 30 minutes. When the 257 first hit the market it was loaded with a 100 grain round nosed bullet with an advertised velocity of 3000 feet per second. It was soon found that this velocity gave too much pressure with the powders available at that time. Velocity was cut to 2900 ft. sec. where it remains to this time with the 100 grain bullet.

As usual with a new cartridge some brothers made great claims for it. Others (more skeptical) after comparing ballistic figures said it was just an over grown 250 Savage with big ears. The 250 drove a 100 grain bullet at a velocity of 2810 ft. sec. as against 2900 ft. sec. for the 257, with about the same trajectory figures over 200 yards.

The real fault lay in the round nosed bullet which does not appreciable better the 250 Savage. Strangely also is the fact that this same round nosed bullet put two strikes on 257 commercial rifles that exists today. The reason for this round nosed bullet, I recall at the time in an article by Major Ned

Hunter's Heart

With over a million Pennsylvanians afield this fall in pursuit of outdoor recreation, the American Heart Association has come up with a few timely suggestions for hunters as an aid in preventing heart failure:

1. Act your age and know your physical limits.
2. Avoid vigorous hill climbs and difficult drives if aware of a heart condition.
3. Do not hunt to the limit of your endurance.
4. Be alert for unusual shortness of breath or pain in the chest as a warning of overexertion.
5. Attempt to condition yourself for the opening day by frequent hikes several weeks in advance of the season.

Roberts, was due to the fact that no pointed bullet available gave the necessary accuracy. This meant one inch, ten shot groups at 100 yards in the Major's book. So evidently the arms companies took the Major's ideas in toto, used the round nosed bullets and designed the magazines accordingly.

With the advent of slower burning powder (4320 and 4064) and pointed bullets that would shoot, the well known fly in the ointment appeared. The 257 is primarly a rifleman's cartridge which generally means handloading. Immediately they began to boost velocities and get improved accuracy. But, the spitzer or pointed bullets are some longer than the round nosed bullets of the same weight. When seated to touch the rifling, or nearly so, they would not feed through the magazines, designed for the short overall length, brought about by the round nosed bullets.

If they seated the pointed bullets deep enough in the case to feed through the magazines, accuracy fell off accordingly. Also they found out there is such a thing as loading density. When they seated the bullets deeper, they cut down air space between powder and bullet. So in order to keep down pressure they had to cut the powder charge, which left them little better off. The varmint hunter did not mind this too much as his was generally a one shot game anyhow. But on large stuff repeat shots were imperative. On most commercial rifles this can be overcome.

But whether your magazine is long or short, due to thousands of 257 rifles sold with short magazines, the loading companies are compelled to continue loading the same overall length no matter what type bullet they use. Thus the reason is clear why the 257 will be a reloading proposition if you want the range, accuracy and wallop this fine cartridge is capable of.

In handloading for the 257 you will find it's somewhat on the prima donna side as compared to the 250 Savage, which seems to shoot well with anything you put in it. The 257 is partial to bullets, different powders and amounts of powder. There also seems to be some variation of performance with different rifles, with the same load. But there are plenty of loads at most velocity levels that give fine accuracy. For instance, 15 grains of 2400 powder, with Winchester 120 primer, behind a Sierra 100 grain bullet gives a velocity of around 1700 ft. sec. This load averaged .75 inch groups for three 5 shot strings at 100 yards in my rifle the last time I shot it. With 15 grains of DuPont 4759 and Winchester III pistol primer, the 75 grain Loverin gas check lead bullet gave good accuracy at a cost little greater than a 22 caliber L.R. cartridge.

The advent of DuPont 4350 powder really established the 257 as King of the 25's in its bid as an all-round Eastern rifle. Here was a slow burning powder not at all cranky on air space. It allowed the heavier bullets to really get rolling and keep rolling, out where the game is on long shots. One great advantage of the 25 caliber is the high sectional density that can be given to comparatively light bullets. This cuts down wind drift and gives high remaining velocity at long range. This also flattens the trajectory thus cutting down guess work as well as retaining the wallop where it counts—on the game.

Muzzle velocity by itself means nothing. Take the 30-06 in the 110 grain bullet that starts out at 3420 ft. sec. At 300 yards it is limping along at 1710 ft. sec. The 150 grain 30-06 starts at 2980 ft. sec. and at 300 yards has slowed down to 2240 ft. sec. The 270 with the 130 grain bullet starting at 3140 ft. sec. is romping along at 2320 ft. sec. at 300 yards, according to Mr. Winchester. The

factory 257 with the 100 grain bullet starts at 2900 ft. sec. and is a measly 1830 ft. sec. at 300 yards. The 117 grain bullet starting at 2650 ft. sec. is ambling along at 1690 ft. sec. at 300 yards.

At this point the 250 Savage clan might well ask, "What Gives"? The answer is the factory loading pressure level. They do not load the 257 high enough to take full advantage of the high sectional density of the bullets.

By comparison, the 180 grain 30-06 and the 125 grain 25 caliber bullet have the same sectional density rating of .270. The 130 grain 270 caliber bullet has a rating of .241, with the 100 grain 25 caliber bullet rating 216.

Now let's take a look at the pressures. The 270 with the 130 grain bullet at 3140 ft. sec. turns up 53500 pounds pressure. The 30-06 with the 150 grain bullet at 2890 ft. sec. turns up 52780 pounds pressure, while the 257 in the 117 grain commercial load turns up a modest 42740 pounds pressure. Now bear in mind that the 257 is shot out of identical actions with cases equally strong as the other two. So let's raise the 257 to the same pressure levels and see what happens.

The 117 grain Remington open point with 46 grains of 4350 powder showed a velocity of 2985 ft. sec. with a pressure of 51580 pounds. The 100 grain bullet with 47 grains of 4350 powder showed 3162 ft. sec. on the chronograph at the same pressure level, which is quite a different picture. Either one of these bullet weights with good sharp pointed bullets will show a remaining velocity at 300 yards of 2500 ft. sec. which is better than either the 276 or 30-06. The best way to get a picture of remaining velocity is to look at the drop test figures. Here is how they stack up from actual firing data—not slide rule. The 257 is the 47 grain handload.

Caliber	Load	Above 100 Yd.	On aim 200 Yd.	Below 300	400	500
30-06	Factory 150 gr. ..	2.4	0.0	8.4	23.8	48.8
270	Factory 130 gr.	2.1	0.0	7.5	21.0	42.0
257	47 gr. 4350 100 gr. ..	2.35	0.0	4.9	15.15	32.2

On deer the 100 grain handload in the 257 and the 130 grain bullet give the same results—pronto. It would be difficult to tell the difference each with the same type of bullet. The 257 factory load is not in the same league as either. This is based on 6 deer with 257 handloads and about 25 with the 270. Two acquaintances who are hunter-rifleman have collected 5 moose between them without a bauble. One uses the 117 grain Sierra, the other the 125 grain Barnes with handloads. So if a moose invades your back yard there is no need to call in a neighbor who owns a magnum. These bullets hold together and drive on in. But you must know the right spot and be able to hit it, which is true of most calibers.

STOLEN

The following outboard motors were stolen on July 28, 1954, from the Bridgeview Boat Club in Tarentum:

Mercury Mark 50. No. 795145. 4 cyl. 40 h.p.

Martin. 7½ h.p. No. CC 132654. 2 cyl.

Champion. 1 cyl. 4⅕ h.p. No. 1K4D1669.

Mercury 10. 2 cyl. 16 h.p. No. 437612.

Any information on these motors should be addressed to: Carl Kolodgry, 208 Wood Street, Tarentum, Pa.



Photo by the Author

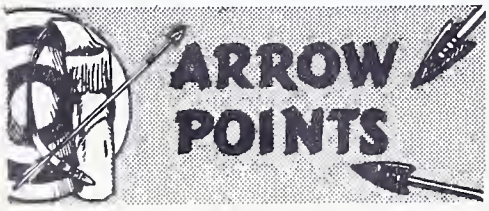
Shooting Form

By Tom Forbes

Part IV

HOLDING

OF THE several individual acts the bowman performs each time he releases an arrow, holding is frequently given scant if any consideration. The effort required to hold a heavy hunting bow steady at full draw is considerable Many bowmen have adapted the less difficult short cut of making the draw and release one continuous operation, but at the expense of good shooting technique and consequent loss in accuracy.



This practice is particularly evident among those bowmen who have attempted to learn to shoot with 50 and 60 pound bows. The beginner who has been advised to purchase a light weight bow with which to learn a proper shooting technique will not be prone to succumb to this error. It will require no undue strain on his part to hold his bow steady at full draw.

In fact, it is good practice for the beginner to bring the bow to full draw and, holding it in that position, mentally check each of the individual acts in detail—stance, draw, and anchor. Be sure that each has been properly performed to this point and conclude the check by aiming at the chosen target.

It is true that an experienced archer appears to draw and release in one

smooth continuous motion. This finished performance was acquired by diligent practice in the manner described until by repetition, each single act became an acquired habit. The speed with which each act of shooting is performed creates an illusion of continuous motion.

When a bowman has acquired good shooting technique he can shoot accurately any weight bow that suits his fancy. A few sighting shots are all that he needs to enable him to change from one bow weight to another.

RELEASE

To loose an arrow instantaneously is an ideal impossible of attainment, and so within the physical limitations of the human hand we try to approach the ideal.

The bow is brought to full draw with the first three fingers of the right hand bearing equally upon the bow string. The thumb need not take any part in the draw and may rest in a relaxed position in the palm of the hand. The initial position of the bow string is at the first joint of each of the three fingers. At the very beginning of the draw the fingers should be relaxed and the bow string should roll toward the finger tips, bunching or balling the flesh toward the tips of the fingers. As the draw is continued the fingers tend to straighten and it becomes possible through practice to bend the first joint of each of the drawing fingers while the second and third joints remain straight. In this manner the connecting link between the hand and the bow string is at a point approximately half way from the ends of the fingers to the first joint. With the drawing fingers bent at the first joint only, the balance of the fingers, the back of the hand and the forearm form a straight line. Thus with the exception of the first joints of the drawing fingers, the arrow, fingers, hand and forearm are all in line. Since it is the shoulder and back muscles which are used to draw the bow, the fingers, hand, wrist, and arm have been frequently likened to a rope whose sole duty is to connect the finger tips to the source of power.

Keep in mind that our sole object is to release the arrow with the least possible effort or movement in order that the initial velocity imparted to the arrow will always be a maximum and not be effected by drag against the drawing fingers.

Because it appears easier, the beginner frequently makes the mistake of curling his drawing fingers around the bow string at the second joints when he draws his bow. A good smooth release from this position is impossible because the bow string follows the archer's fingers as he attempts to uncurl them from the bow string. In a further attempt to get his fingers loose from the bow string, a novice will compound the original error by throwing his hand away from his face during the release. This additional error only serves to throw the arrow off the line of flight to the target.

The correct release is merely to relax the effort necessary to keep the first joints of the shooting fingers bent. It is a law of Physics that "every action has an equal and opposite reaction." Therefore, as the arrow is released and flies toward the target the archer's hand and arm will without further effort move in the direction opposite to that taken by the arrow. By physical limitations this movement is limited to a few inches. The archer should make no effort of any kind to impart any other motion to the drawing hand upon release.

Any forward movement of the arrow prior to its release is termed "creeping" and is to be avoided because it results in varying losses in the initial velocity imparted to the arrow, and consequently unexpected changes in elevation of the flight of the arrow.

The method described will permit a quick, smooth, and effortless release. At all times guard against creeping and remember that the only movement in the drawing hand and arm, prior to the release, is relaxing the effort being made to prevent the tips of the shooting fingers straightening under the pressure exerted by the bow string.

FOLLOW THROUGH

If the reader has had sufficient interest to read this far, there is just one more pitfall which he must avoid if he is to master the art of hitting a designated target with an arrow shot from his bow. And most important, to stand a reasonable chance of bringing down that buck when he is able to come within bow range of a nice one during the open season.

The strain of bringing a bow to full draw in the proper manner is considerable and it is quite normal to succumb to the urge to relax the instant the bow string is released. If some method is not employed to combat this natural tendency, we will drop the extended bow arm and move the drawing hand to a more comfortable position the instant we are relieved of holding the pressure built up in the drawn bow. Since the arrow rest is also the platform on which the arrow rides and is guided toward the target while the arrow remains in contact with the bow, just as the barrel of a rifle serves to guide the bullet, it follows that the bow hand must remain at full draw position following the release until the arrow has had sufficient time to sever all contact with the bow. This requires conscious effort on the part of the bowman; as does its counterpart, that the shooting hand and arm also remain in position in the line of flight until the arrow is well on its way to the target. This combination of acts is termed the "follow through" and is standard operating procedure for all bowmen who consistently hit their selected target.

This series of articles which beban in the July 1954 issue of the Pennsylvania Game News has been written to help the novice bowman avoid some of the many pitfalls which fall to the lot of each of us and which would prevent his acquiring even a modestability in the use of the bow. It is difficult to translate the written world into the desired action and the novice is fortunate indeed if he has the guidance of an experienced bowman as he attempts to master the ancient art of shooting a bow.

Good luck and good hunting.

Recreation on National Forests at New High

A record number of vacationists turned to the national forests for outdoor recreation during 1953. Reports from the field offices of the U. S. Forest Service show that visits during the past year totaled 35,400,000. This new high is an increase of seven per cent over visits in 1952, and a 97 per cent gain over trips made in 1941, when the largest pre-war use was made of the national forests, according to the Wildlife Management Institute.

Based on sample counts, approximately 8,680,000 recreationists listed picnicking as their primary purpose. Fishing drew 6,803,000; hunting, 3,161,000; camping 9,285,000; winter sports 1,828,000; and swimming, 1,104,000. About 9,285,000 persons listed general enjoyment of the forests as their basic objective. Others visits were made for hiking, riding, canoeing, organization camping, and wilderness travel. Not included in this total figure are an estimated 90 million sight-seers who drove over forest highways to enjoy the spectacular scenery.

SPECIES	OPEN SEASONS FIRST DAY	LAST DAY	DAILY BAG LIMITS	MAXIMUM POSSESSION LIMITS*	LEGAL SHOOTING DAYS AND HOURS (SUNDAYS EXCEPTED) BOTH DATES INCL.	HOURS (EASTERN STANDARD TIME)
Sora	Sept. 1	Nov. 9	25	25		Sept. 1 to Nov. 9....½ hr. before sunrise to sunset Oct. 30 only.....9:00 A.M. to sunset
Rails (except Sora) and Gallinules	Sept. 1	Nov. 9	15	30		Sept. 1 to Nov. 9....½ hr. before sunrise to sunset Oct. 30 only.....9:00 A.M. to sunset
Woodcock	Oct. 1	Nov. 9	4	8		Oct. 1 to Nov. 9....½ hr. before sunrise to sunset Oct. 30 only.....9:00 A.M. to sunset
NO FEDERAL STAMP REQUIRED TO HUNT SORA, RAILS, GALLINULES, WOODCOCK, JACKSNIPE AND DOVES.						
Wilson's or Jacksnipe	Oct. 1	Oct. 15	8	8		Oct. 1 to Oct. 15....½ hr. before sunrise to sunset
Doves	Sept. 15	Oct. 14	8	8		Sept. 15 to Oct. 14....½ hr. before sunrise to sunset
Ducks (including American and Red-breasted Mergansers)	Oct. 15	Dec. 13	4 (only 1 Wood Duck) (only 1 Hooded Merganser)	8 (only 2 Wood Ducks) (only 1 Hooded Merganser)	FEDERAL STAMP REQUIRED	Oct. 15 only.....12:00 Noon to sunset Oct. 30 only..... 9:00 A.M. to sunset All other days of open season ½ hr. before sunrise to sunset
Geese (except Snow)	Oct. 15	Dec. 13	2**	4**		The season for waterfowl (except Brant) and Coots on the Delaware River between Pennsylvania and New Jersey below Trenton Falls and the Counties of Bucks, Philadelphia and Delaware on the Pennsylvania side shall be from November 3 to January 1, incl. Shooting hours on opening day 12:00 o'clock Noon.
Coots	Oct. 15	Dec. 13	10	10		
Brant	Oct. 15	Nov. 13	6	6		
NO OPEN SEASON—SNOW GEESE, AND SWANS.						

* Possession 90 days after close of season where taken.

** Not more than 2 geese of any kind (except Snow Geese) in a straight or mixed bag a day, or 4 singly or in the aggregate in possession.

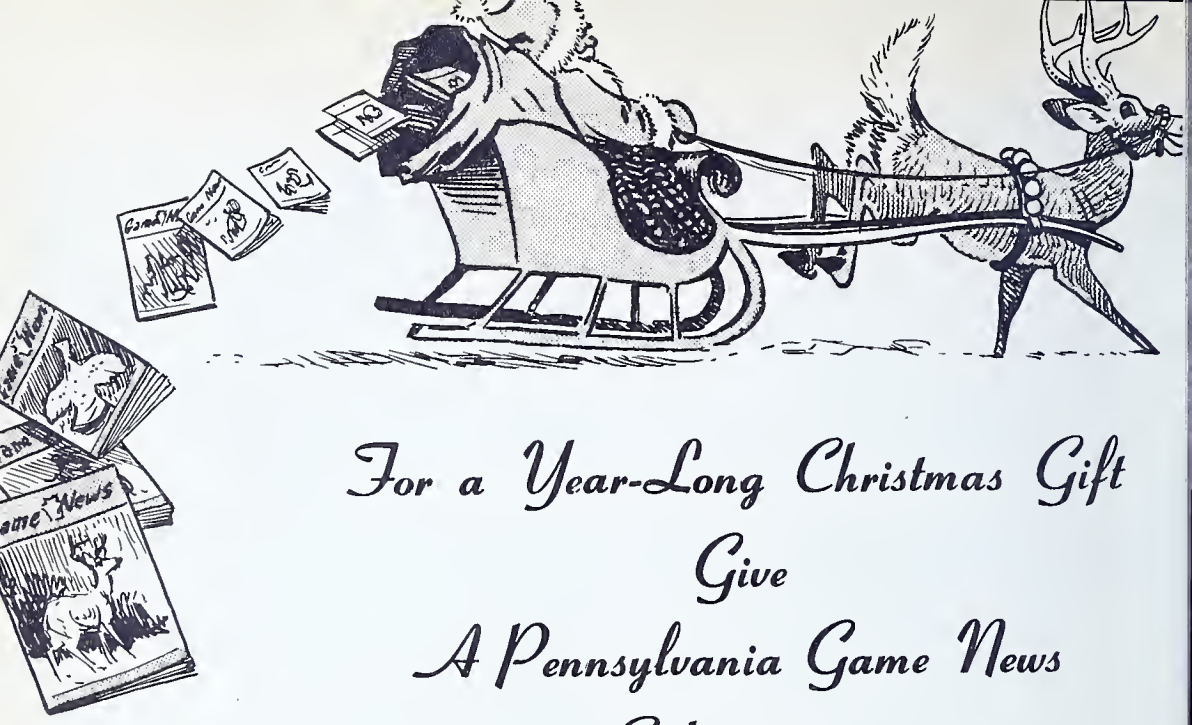
MIGRATORY BIRD HUNTING METHODS

Permitted: Bow and arrow, or shotgun not larger than 10-gauge, fired from shoulder (including hand-operated and semi-automatic repeating shotgun of not more than 3-shell capacity, which must be plugged to 3 shots so that plug cannot be removed without disassembling the gun); dog; blind; boat propelled by hand; floating device other than sinkbox; artificial waterfowl decoys. Injured or dead waterfowl may be picked up by means of a motorboat; sailboat or other craft. Shooting is permitted from a boat or other craft having a motor attached if such craft is fastened within or tied immediately alongside of any type of stationary hunting blind.

Prohibited: All rifles; live duck or goose decoys; automobile; aircraft; sinkbox (battery); power boat, sail boat, or any device towed by power boat or sailboat. Waterfowl, coot, gallinules and doves may not be taken under any circumstances by the aid of salt, or shelled or shucked or unshucked corn, wheat, or other grains, or other feed or means of feeding similarly used to lure, attract, or entice such birds to, on, or over the area where hunters are attempting to take them. As used herein the terms "salt, or shelled or shucked or unshucked corn, wheat, or other grains," or "other feed or means of feeding similarly used," shall not be construed as including salt blocks, properly shocked corn, standing crops (including aquatics), flooded standing crops, flooded harvested crop lands, or, in connection with the hunting of waterfowl, coot and gallinules, grains found scattered solely as a result of normal agricultural practices, or, in connection with the hunting of doves, grains found scattered solely as a result of normal agricultural harvesting. Waterfowl may not be taken by means, aid or use of cattle, horses or mules and no motor-driven land, water or air conveyance or sailboat may be used to concentrate, drive, rally or stir up waterfowl or coots.

FEDERAL STAMP FOR MIGRATORY BIRD HUNTING

It is unlawful for a person over the age of 16 years to take migratory waterfowl unless he carries on his person an unexpired Federal migratory bird-hunting stamp, validated by his signature written in ink across its face. Not valid after June 30 following date of issue. This stamp is not required to hunt Sora, Rails, Gallinules, Woodcock, Wilson's or Jacksnipe and Doves.



For a Year-Long Christmas Gift Give A Pennsylvania Game News Subscription

The best source of information on HUNTING and WILDLIFE CONSERVATION in YOUR PENNSYLVANIA. An attractive Christmas card announcing your gift will be sent with each subscription.

.....Tear Off and Use As Order Blank.....

PENNSYLVANIA GAME NEWS
Circulation Section
430 North Street
Harrisburg, Pa.

SUBSCRIPTION RATES
One Year—12 issues—$1.00
Three Years—36 issues—$2.50
Make check or money order payable to "Pennsylvania Game Commission."

Send subscriptions to: (Please Print) Date:_____

Name..... Send Gift Card .....☐
Address..... New ☐ Renewal ☐
City.....Zone.....State..... Years..... Amt. $.....

Name..... Send Gift Card .....☐
Address..... New ☐ Renewal ☐
City.....Zone.....State..... Years..... Amt. $.....

Name..... Send Gift Card .....☐
Address..... New ☐ Renewal ☐
City.....Zone.....State..... Years..... Amt. $.....

Sign gift card .....Total Amt.
Address .....Enclosed $.....

THE PENNSYLVANIA GAME COMMISSION DIRECTORY

EXECUTIVE OFFICE

DR. LOGAN J. BENNETT ..... *Executive Director*
ROBERT D. REED ..... *Dir. of Public Relations*

BUREAU OF ADMINISTRATION

ROLLIN HEFFELFINGER ..... *Director*

Accounting & Service Division

N. E. SLAYBAUGH ..... *Comptroller*
H. H. FRAIM ..... *Supervisor, Accounting Section*
C. J. WEAVER ..... *Supervisor, Service Section*

Conservation Education Division

LEO A. LUTTRINGER, JR. ..... *Chief*

Ross Leffler School of Conservation

W. C. SHAFFER ..... *Chief*

Wildlife Research Division

ROGER M. LATHAM ..... *Chief*

BUREAU OF WILDLIFE CONSERVATION

JAY C. GILFORD ..... *Director*
ROBERT E. LATIMER ..... *Waterfowl Coordinator*

Land Utilization Division

C. C. FREEBURN ..... *Chief*
E. BRUCE TAYLOR ..... *Supervisor, Land Title & Record Section*
M. J. GOLDEN ..... *Supervisor, Farm-Game Cooperative Section*
J. B. SEDAM ..... *Supervisor, Food & Cover Section*
WILBUR M. CRAMER ..... *Coordinator, Pittman-Robertson Projects*

Wildlife Protection Division

T. F. BELL ..... *Chief*
H. T. ENGLERT ..... *Asst. Chief*
HAROLD L. PLASTERER ..... *Supervisor, Bounty Claims Section*

Game Propagation Division

EARL S. GREENWOOD ..... *Chief*
RALPH E. BRITT ..... *Game Propagation Consultant*

WILDLIFE CONSERVATION DIVISIONS
(Field)

SOUTHEAST DIVISION—M. D. Stewart, Supervisor, 1009 N. Eighth St., Reading. Phone: 4-2661
Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill, York.

NORTHEAST DIVISION—C. C. Stainbrook, Supervisor, 987 Wyoming Ave., Forty Fort. Phone: Kingston 7-6193
Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne, Wyoming.

NORTHCENTRAL DIVISION—M. E. Sherman, Supervisor, 214½ E. Water St., Lock Haven. Phone: 5400
Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga, Union.

SOUTHCENTRAL DIVISION—A. G. Logue, Supervisor, 327 Penn St., Huntingdon. Phone: 872
Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder.

NORTHWEST DIVISION—T. A. Reynolds, Supervisor, 422 13th St., Franklin. Phone: 726
Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren.

SOUTHWEST DIVISION—G. L. Norris, Supervisor, 331 E. Main St., Ligonier. Phone: 519
Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

Pennsylvania Official 1954 Open Seasons and Bag Limits

(Regulations apply for Hunting License Year, September 1, 1954-August 31, 1955)

Open season includes first and last dates listed, **Sundays excepted**, for game. **The opening hour for small game and other wild birds or animals on October 30 will be 9:00 A. M.** Otherwise, shooting hours daily are from 7:00 A. M. to 5:00 P. M., but from July 1 to September 30 inclusive, 6:00 A. M. to 7:30 P. M. (All shooting hours based on Eastern Standard Time.)

	BAG LIMITS		OPEN SEASONS	
UPLAND GAME (Small game possession limits below)	Day	Season	First Day	Last Day
Ruffed Grouse	2	8	Oct. 30	Nov. 27
Bobwhite Quail	4	12	Oct. 30	Nov. 27
Wild Turkeys	1	1	Oct. 30	Nov. 27
Ringneck Pheasants, males only	2	8	Oct. 30	Nov. 27
Rabbits, Cottontail	4	20	Oct. 30	Nov. 27
Squirrels, Gray, Black & Fox **(combined)**	5	20	Oct. 30	Nov. 27
Squirrels, Red **(closed October 1 to 29 incl.)**	Unlimited		All mos. (except Oct. 1-29)	
Hares (Snowshoe Rabbits)	2	6	Jan. 1	Jan. 8, 1955
Raccoons	Unlimited		Unprotected	
Woodchucks (Groundhogs)	Unlimited		Unprotected	
Grackles	Unlimited		Unprotected	
Bears, over one year old, by individual	1	1	Nov. 15	Nov. 27
Bears, as above, by hunting party of three or more	2	2	Nov. 15	Nov. 27
DEER: **Bow and Arrow Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal (requires hunting license and Special Archery License) by individual	1	1	Oct. 11	Oct. 23
DEER: **Regular Season**—Male with two or more points to one antler: Provided, a male deer with an antler three or more inches long without points, measuring from the top of the skull as the deer is in life, shall be considered legal: by individual	1	1	Nov. 29	Dec. 11

NO OPEN SEASON—Hungarian Partridges, Hen Pheasants, Sharp-tailed Grouse, Cub Bears, Elk, Spike Bucks with antlers less than three inches long, Antlerless Deer, and Otters.

FURBEARERS:				
Skunks and Opossums	Unlimited		Unprotected	
Minks	Unlimited		Nov. 5	Jan. 1, 1955
Muskrats (traps only)	Unlimited		Dec. 1	Feb. 1, 1955
Beavers (traps only) state-wide	4	4	Feb. 14	Mar. 5, 1955

SPECIAL REGULATIONS

POSSESSION AND TRANSPORTATION LIMITS of legally-killed small game shall mean not more than the daily limit for the first day nor more than an accumulated total for each succeeding day of the open season for each species; but not in excess of the season limit, regardless of where held, stored or found in possession.

DEER—Even though there are two separate seasons for taking deer, a hunter may not kill more than one deer during the two combined 1954 seasons, whether hunting individually or with a camp or hunting party. A Special Archery License is required during Bow and Arrow Season, issued only by the Pennsylvania Department of Revenue, Harrisburg, at a fee of $2.00.

BEAVERS—No trapping at Commission-posted dams. **Nonresidents may not trap beavers. One person may set, tend or operate 10 traps only.** Traps must not be set on the structure of any beaver dam or house, or within 25 feet of the waterline on the structure of either thereof. Tags must be kept above ice or waterline to facilitate identification without disturbing traps. **Pelts must be tagged within 10 days after season,** and may not be sold or otherwise disposed of until properly tagged. Present them to the Game Protector in District or County where trapped.

TRAPPING—Traps for furbearers not to be placed, staked or set before 7:00 A. M. on the first day of the open seasons. The season indicated for Trapping closes at 12:00 o'clock Noon on last day. Traps must be tagged with metal name tags.

SNARES—The use of snares is prohibited in all counties except by special permit.